GB304A-GE

General Purpose Server Barebone

User's Manual

Document Number: MAN-00101-A

Contents

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Safety Information

When installing, operating, or performing maintenance on this equipment, basic safety precautions, as listed below, should always be followed to reduce the risk of fire, electric shock, and personal injuries.

- Read and understand all instructions.
- Observe warnings and instructions marked on the product.
- For proper mounting instructions, please consult the User's Manual provided with the product.
- Do not place this product on an unstable cart, stand or table which might cause the product to fall and sustain serious damage.
- Install only equipment identified in the User's Manual provided with this product. Use of other equipment might cause improper connection of circuitry that might lead to fire or personal injuries.
- This product should be operated only from the type of power source indicated on the marked label. If you are uncertain about the type of power supply in your area, consult your dealer or the local Power Company.
- Disconnect the power supply module when removing power from the system.
- Unplug this product from the wall outlet before cleaning. Use a damp cloth for cleaning. Do not use liquid cleaners or aerosol cleaners.
- Do not use this product near a water source such as a wet faucet.
- Never push objects of any kind into this product through open slots as they may touch dangerous voltage points or short out parts that could result in fire or electric shock. Never spill liquids of any kind on the product.
- Do not block or cover slots and openings in the unit as they are for ventilation to protect the unit from overheating. Do not place the product in a built-in installation unless proper ventilation is available.
- To reduce the risk of electric shock, do not disassemble this product. Service should only be performed by trained personnel. Opening or removing covers and/or circuit boards may expose you to electric or other risks. Incorrect reassembly can cause electric shock when the unit is subsequently used.
- Risk of explosion is possible if battery is replaced with an incorrect type. Dispose used batteries according to the instruction.
- This product is equipped with a three-wire grounding type plug, a plug with a third (grounding) pin. This plug is intended to fit only into a grounding type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace the outlet. Do not defeat the safety purpose by removing the grounding type plug. Do not use a 3-to-2 prong adapter at the receptacle. Use of this type of adapter may result in risk of electric shock and/or damage to this product.

About This User's Manual

This document provides a detailed description of the GB304A -GE including:

- The General Features of the Product
- Hardware Setup
- Motherboard Settings
- BIOS Configuration and Settings
- BMC Configuration and Settings

Chapter 1.
Product Introduction

1.1 General Information

GB304A-GE, a 3U General Purpose Barebone, supports Dual-Core/Quad-Core/6-Core processors. GB304-GE has 3 x 3.5” + 2 x 2.5” size HDD bays for flexible storage applications. GB304-GE harnesses MAX I/O™ technology, maximizing the usage of off-the-shelf expansion cards (up to 10) in the barebone.

System Package Contents

Check your package for the following items:

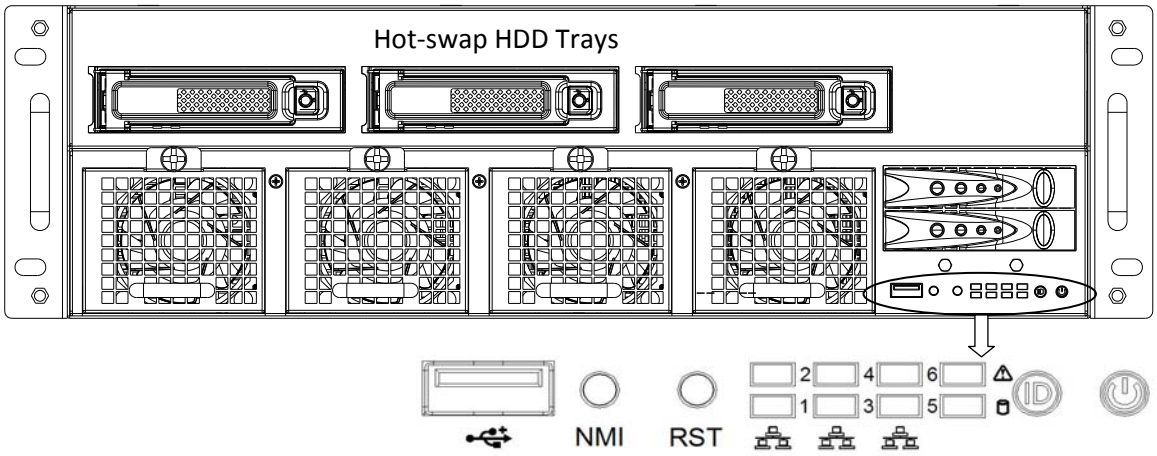
Motherboard	Gemini
Components	1x 1000W 1+1 Hot-swap Redundant Power Supply
	3 x Hot-Swap 3.5” HDD Trays
	2 x Hot-Swap 2.5” HDD Trays
	3 x SAS/SATA Single HDD backplane
	1 x SAS/SATA 2-in-1 Backplane for 2.5" HDD
	1 x MAX I/O Main Riser Card
	1 x on-board Riser Card
	4 x System Fans
Accessories	2 x Power Cords
	1 x HDD Tray Key
	1 x 3.5” Screw Kit
	1 x 2.5" Screw kit
	5 x Internal SATA Cables
	1 x 24” Rail
	2 x Heatsinks

1.2 System Specifications

Dimensions (with chassis ears/protrusions)		
W x D x H	mm : 482.6 x 635 x 133.4 inches : 19 x 25 x 5.25	
Motherboard		
Motherboard	Gemini (PSG-M-GEDP036D-110)	
Processor		
Processor Support	Dual LGA1366 sockets to support two(2) Dual-Core/Quad-Core/6-Core Intel® Xeon® processors 5500/5600 series (Nehalem/Westmere)	
System Bus	1066/1333 MHz	
Chipset		
Chipset Support	• Dual(2) Intel® 5520(TylersburgEP) • Intel® 82801JIR (ICH10R)	
System Memory		
System Memory	•Twelve(12) DIMM slots support up to 192 GB of DDR3 800/1066/1333 MHz Registered ECC memory (recommended) / Unbuffered ECC SDRAM • Tri-channel, 2 DIMMs per channel	
Front Panel		
Controls	• Power ON/OFF • System ID • System Reset	• NMI button • 1 x USB
LEDs	• Power • System ID • Alert	• LAN • HDD
Drive Bays		
Drive Bays	• Three(3) x 3.5" hot-swap SATA/SAS HDD bays • Two (2) x 2.5" hot-swap SATA/SAS/SSD HDD bays	
Expansion Slots		
Expansion Slots	• 1 x PCIe X8 slot (low-profile) Choice of two configurations: • 2 x PCIe X16 slots • 3 x PCIe X8 slots • 2 x PCIe X8 slots (X4 lanes) or	• 2 x PCIe X16 slots (X8 lanes) • 5 x PCIe X8 slots • 2 x PCIe X8 slots (X4 lanes)
Riser Card (included)		
PSG-RC-GEOB-10-110	2U on-board PCIe Gen2 X8 to 1 PCIe X8 Riser for Gemini	
PSG-RC-GEVR-90-210	3U Gold finger PCIe Gen2 X16 to 2 PCIe X16 + 3 PCIe X8 + 2 PCIe X8 (X4 lanes) or 2 PCIe X16 (X8 lanes) + 5 PCIe X8 + 2 PCIe X8 (X4 lanes) Vertical Riser for Gemini	
SATA/SAS Backplane		
SATA/SAS BP	• Three(3) x SAS/SATA 3G/6G Single BP	• One(1) x SAS/SATA 6G 2-in-1 BP
System BIOS		
BIOS Type	• AMI BIOS • SPI (Serial Peripheral Interface) FLASH Interface	
BIOS Features	• ACPI 1.0/2.0/3.0	• IPMI KCS interface

	• PXE 2.0 • WOL • AC loss recovery	• SMBIOS 2.0 • Serial console redirection
On-Board Devices		
SATA	Built-in Intel® ICH10R SATA2 controller with RAID support	
IPMI	Aspeed AST2050 BMC • Intelligent Platform Management Interface 2.0 (IPMI 2.0) • iKVM, Media Re-direction, IPMI over LAN, Serial over LAN • SMASH support	
Network Controllers	• Two(2) Intel® 82571EB (Ophir) PCIe Dual-port GbE controller; external • Intel® 82574L (Hartwell) PCIe Single-port GbE controller; external (BMC Management) • Intel® 82567LM (Boazman) GLCI on ICH10R Single-port GbE PHY; external	
Graphics	Aspeed AST2050 graphics controller • 8MB of memory • 1600 x 1200 @ 60 Hz	
Super I/O	Winbond W83627DHG	
Rear I/O		
LAN	6 x RJ-45 ports	
USB	2 x USB ports	
VGA	1 x VGA port	
Serial Port	1 x DB-9 serial port	
Power Supply		
Power Supply	1000W 1+1 redundant power supply • 90-264VAC, 47-63 Hz	
System Cooling		
System Cooling	Four (4) 60x51mm hot-swap redundant fans	
System Management		
System Management	• IPMI 2.0 compliance • KVM over IP • Media redirection • CPU temperature (PCEI) • System temperature	• Fan speed detection • Smart Fan speed control • System ID / System fail indicator • SMASH support • Remote Power ON/OFF/Reset
Operating Environment		
Environmental Specifications	• Operating Temperature: 0 ~ 35°C • Operating Altitude Condition: 0 ~ 10K feet • Storage Temperature: -20° ~ 60°C • System Relative Humidity: 5% to 95% (38°C) non-condensing	

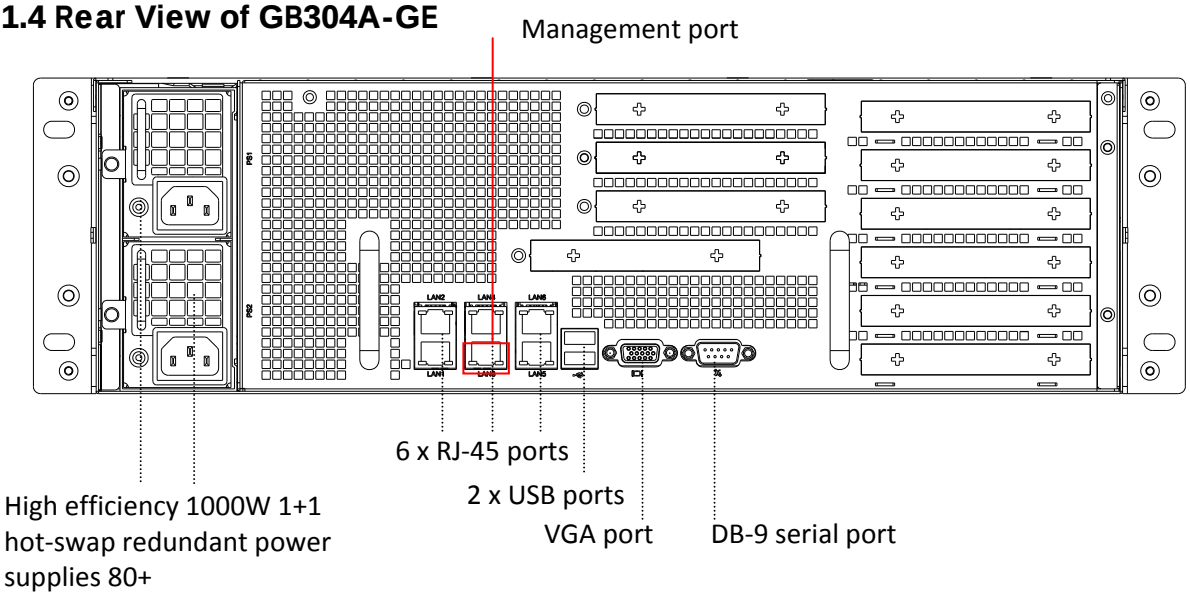
1.3 Front View of GB304A-GE



LED	Icon	Color	System Behavior
Power LED		Green	Solid: System On Off: System Off
System ID LED		Blue	System Identification Blink: Activity
Alert LED		Red	Light: System Alert
LAN LED		Green	Light: Link Blink: Activity
HDD LED		Green	Blink: Activity

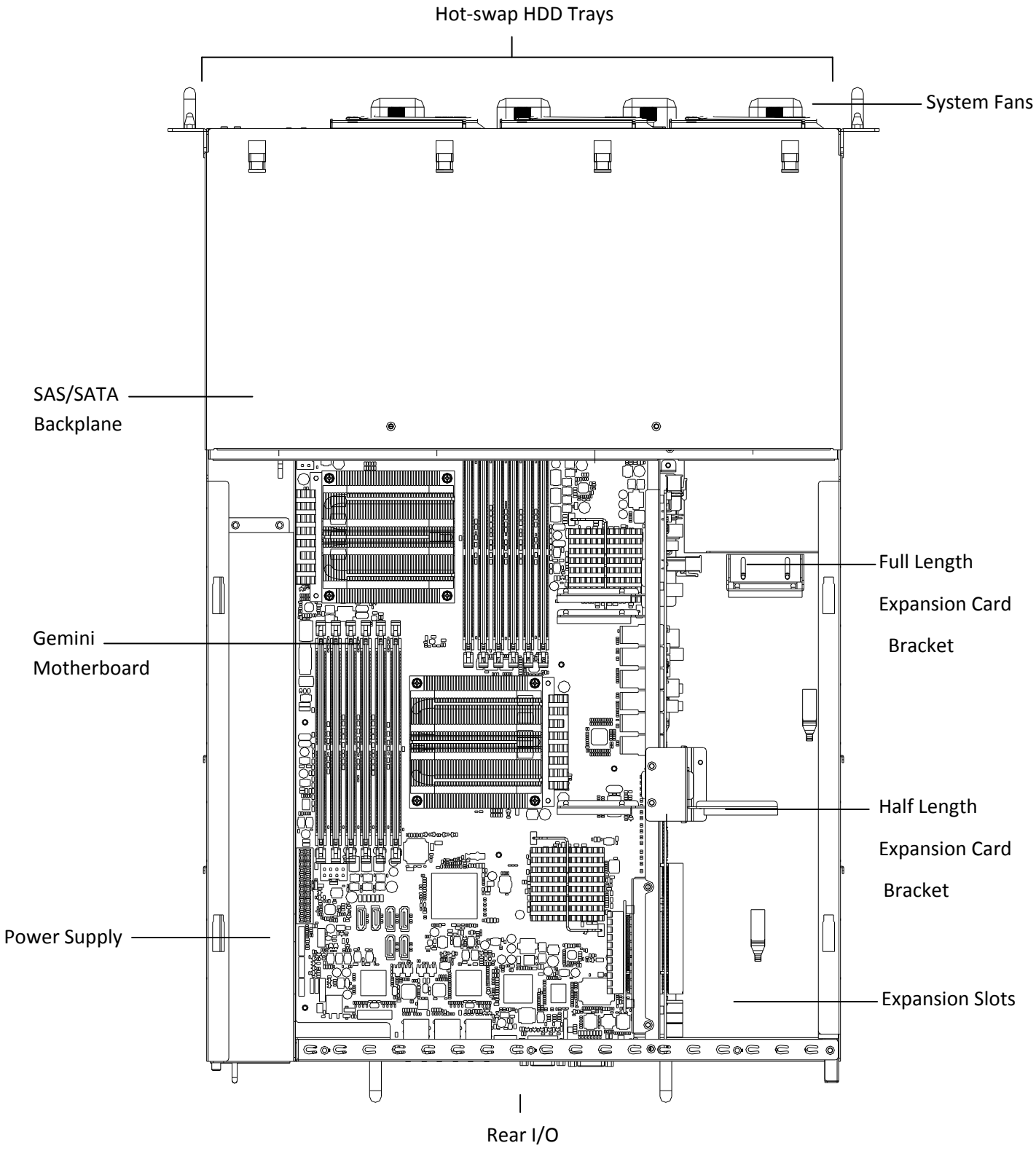
Controls	Icon	System Behavior
Power ON/OFF		Push for Power On or Off
System ID		Push for ID LED On or Off
System Reset	RST	Push for System Reset
NMI	NMI	Non-maskable interrupt; Push for the highest priority interrupt in the system
USB Port		For USB device connection

1.4 Rear View of GB304A-GE



1.5 Top View of GB304A-GE

The barebone server includes the basic components shown below.



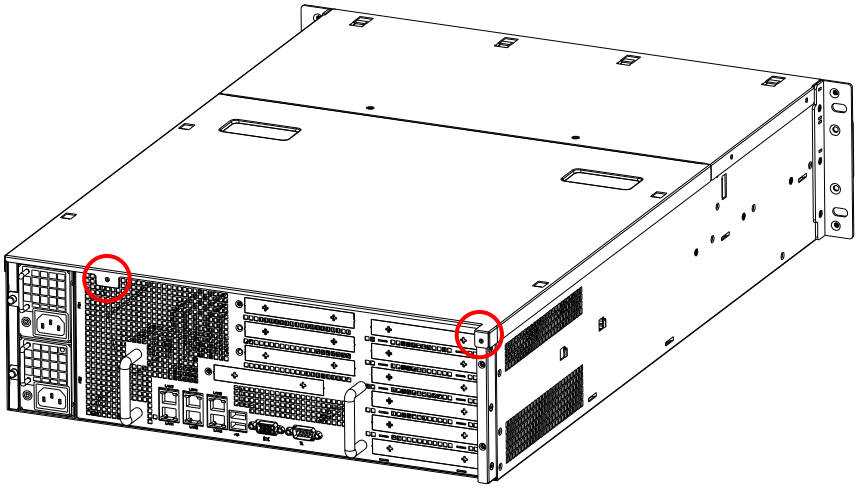
Chapter 2.
Hardware Setup

This section demonstrates maintenance procedures in replacing a defective part once the GB304A-GE appliance is installed and is operational.

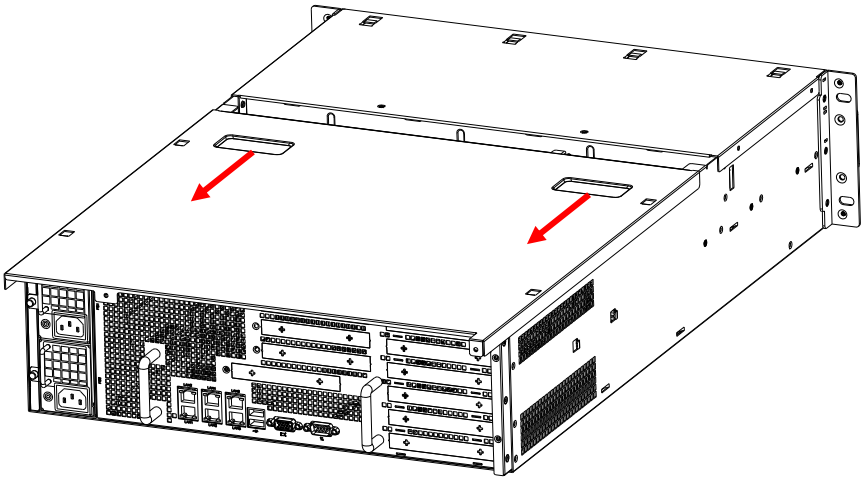
2.1 Chassis Cover

2.1.1 Removing the Chassis Cover

1. Release the two screws on the rear panel.

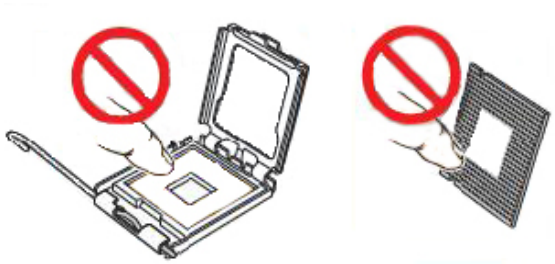


2. Pull the cover back to open the rear cover from chassis.



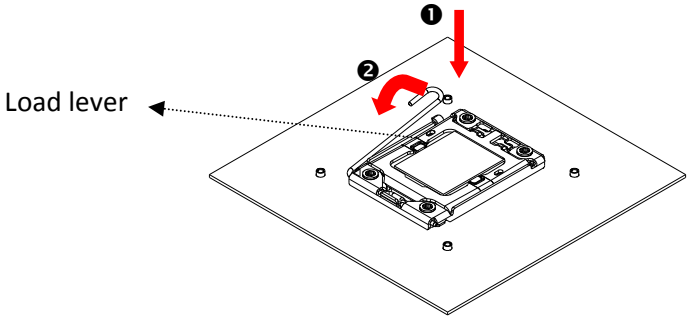
2.2 Central Processing Unit (CPU)

CAUTION : WHEN UNPACKING A PROCESSOR, HOLD THE PROCESSOR ONLY BY ITS EDGES TO AVOID TOUCHING THE CONTACTS.

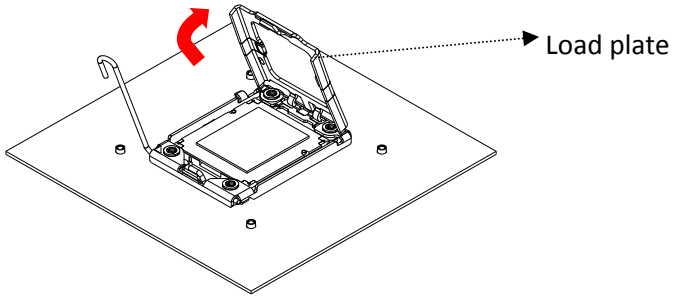


2.2.1 Installing the CPU

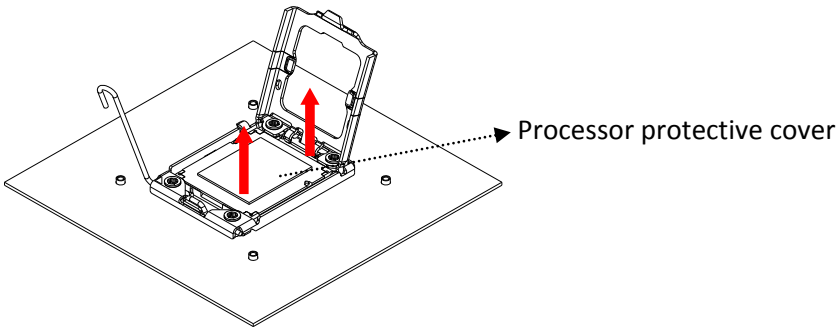
1. Press the load lever to release the load plate.



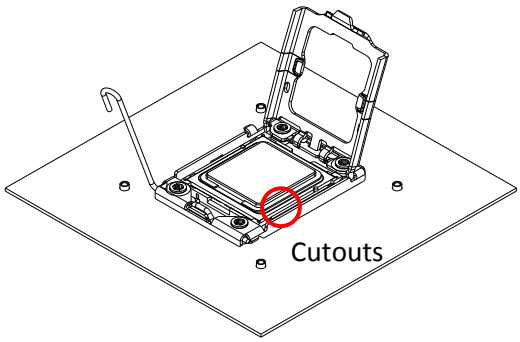
2. Lift the load plate.



3. Remove the processor protective cover from CPU socket.

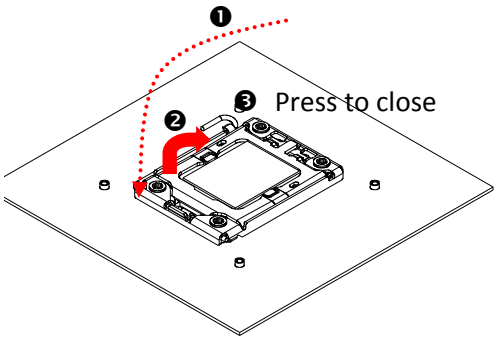


4. Align the processor cutouts against the socket notches.



CAUTION: THE PINS OF THE PROCESSOR SOCKET ARE VULNERABLE AND EASILY SUSCEPTIBLE TO DAMAGE IF FINGERS OR ANY FOREIGN OBJECTS ARE PRESSED AGAINST THEM. PLEASE KEEP THE SOCKET PROTECTIVE COVER ON WHEN PROCESSOR IS NOT INSTALLED.

5. Close the load plate & load lever.

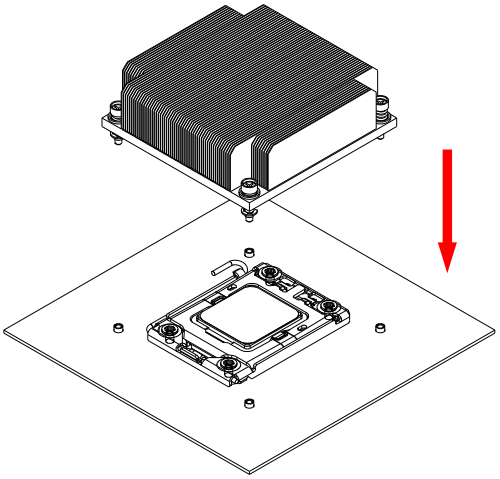


2.2.2 Installing the CPU Heatsink

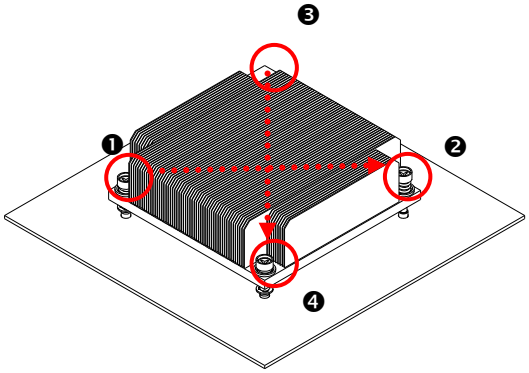
NOTE: APPLY THERMAL PASTE TO THE BOTTOM OF HEATSINK AND SPREAD IN AN EVEN THIN LAYER BEFORE INSTALLING THE HEATSINK.

To install the CPU heatsink:

1. Place the heatsink on top of the CPU, ensuring that the four fasteners match the holes on the motherboard.

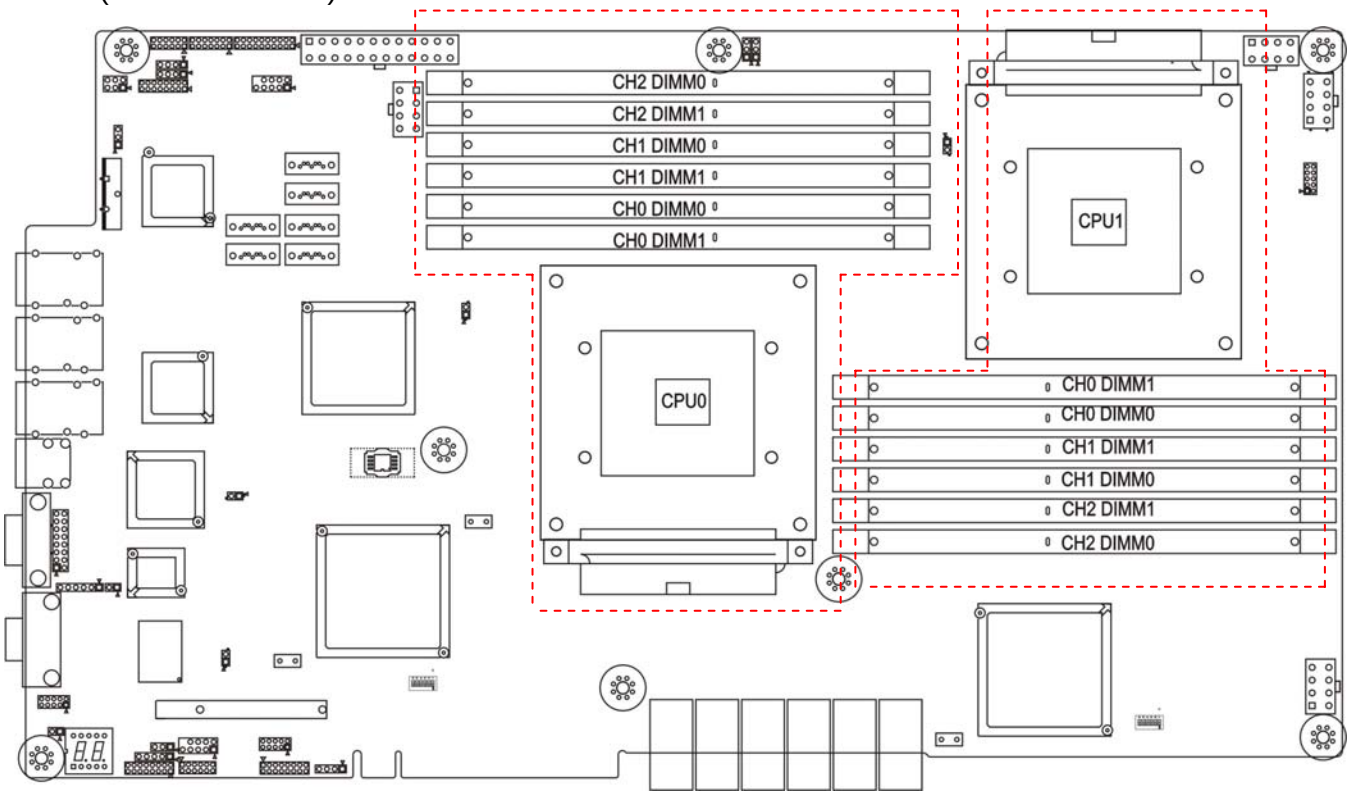


2. Tighten the four screws in a diagonal sequence, a couple of turns at a time, until all four screws are secure and the heatsink is securely fastened to the chassis.

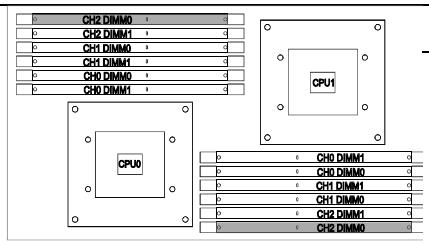
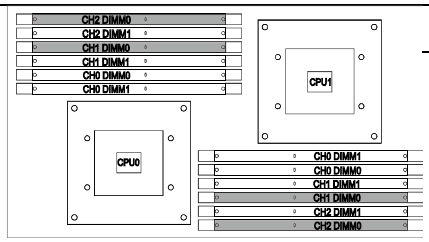
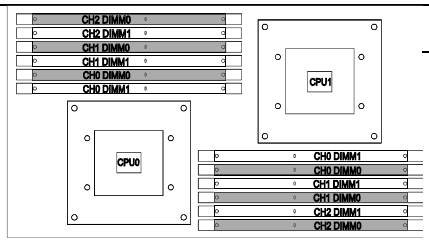


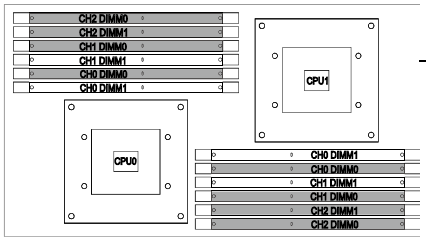
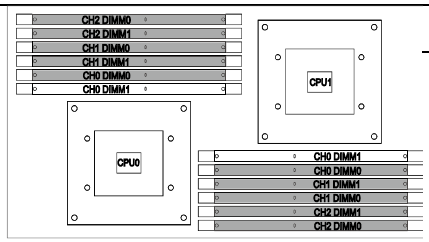
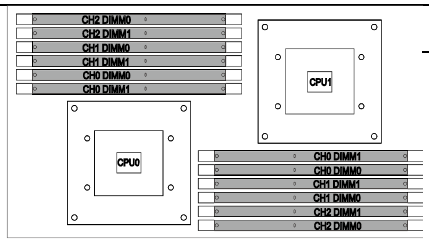
2.3 System Memory

This server board supports up to twelve DDR3 800/1066/1333 Registered ECC SDRAM (recommended)/ Unbuffered ECC SDRAM.



1. Populate DIMMs in the following order:

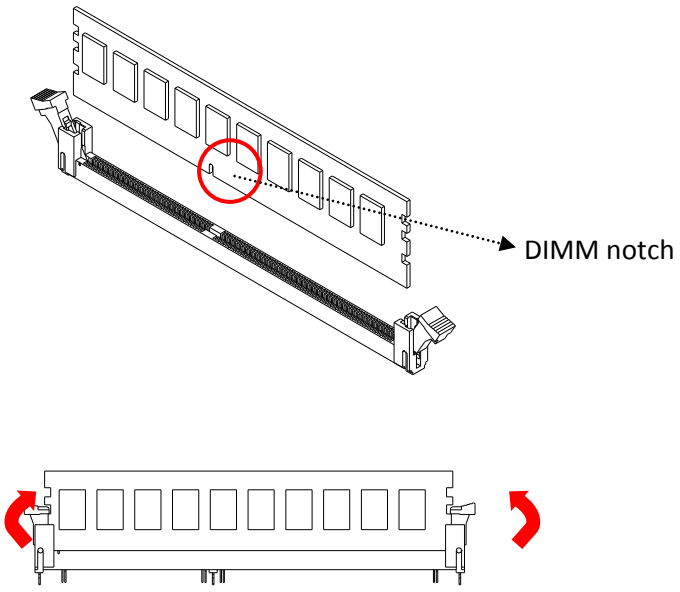
DIMM Numbers	DIMM arrangement			
		CH0	CH1	CH2
2 DIMMs		-	-	CPU0 DIMM 0 CPU1 DIMM 0
		CH0	CH1	CH2
4 DIMMs		-	CPU0 DIMM 0 CPU1 DIMM 0	CPU0 DIMM 0 CPU1 DIMM 0
		CH0	CH1	CH2
6 DIMMs		CPU0 DIMM 0 CPU1 DIMM 0	CPU0 DIMM 0 CPU1 DIMM 0	CPU0 DIMM 0 CPU1 DIMM 0

		CH0	CH1	CH2
8 DIMMs		**CPU0 DIMM 0** **CPU1 DIMM 0**	**CPU0 DIMM 0** **CPU1 DIMM 0**	**CPU0 DIMM 0** **DIMM 1** **CPU1 DIMM 0** **DIMM 1**
10 DIMMs		**CPU0 DIMM 0** **CPU1 DIMM 0**	**CPU0 DIMM 0** **DIMM 1** **CPU1 DIMM 0** **DIMM 1**	**CPU0 DIMM 0** **DIMM 1** **CPU1 DIMM 0** **DIMM 1**
12 DIMMs		**CPU0 DIMM 0** **DIMM 1** **CPU1 DIMM 0** **DIMM 1**	**CPU0 DIMM 0** **DIMM 1** **CPU1 DIMM 0** **DIMM 1**	**CPU0 DIMM 0** **DIMM 1** **CPU1 DIMM 0** **DIMM 1**

2. Unlock a DIMM socket by pressing the retaining clips outward.

3. Insert module vertically and press down until it snaps into place.

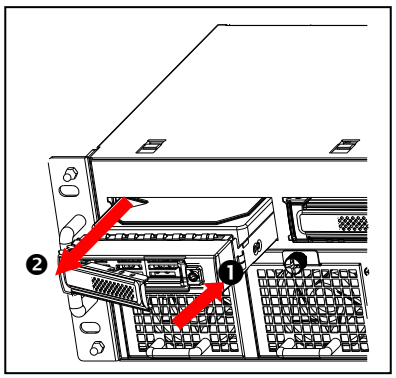
NOTE: DIMM NOTCH AND SOCKET BUMP MUST ALIGN AS SHOWN.



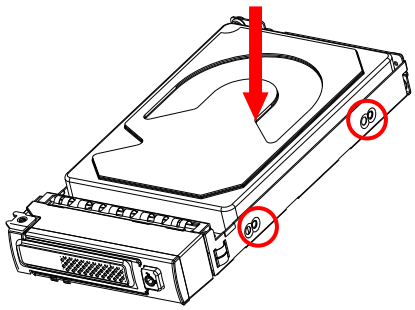
2.4 Drive Bays

2.4.1 Installing or Replacing 3.5” Hot-swap SAS/SATA HDD

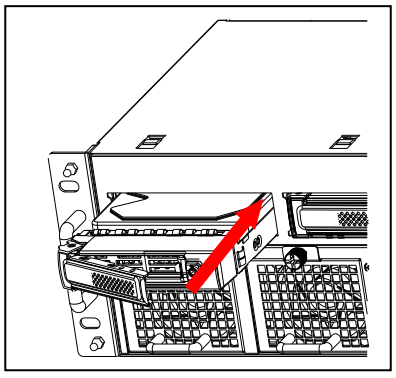
1. Release a drive tray by pressing the unlock button and pinching slightly the lock lever and pulling out the drive tray.
2. Firmly hold the tray lever and pull the drive out of the bay.



3. Place the 3.5” HDD on the tray and then secure it with four screws from the both sides of HDD tray.



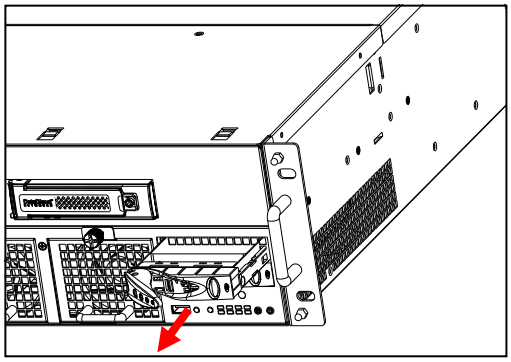
4. Insert the drive carrier into its bay. Push the tray lever until it clicks. Make sure the drive tray is correctly secured in place when its front edge aligns with the bay edge.



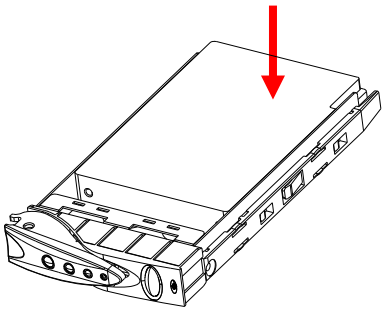
5. Repeat steps1 to 4 to install the rest of HDD.

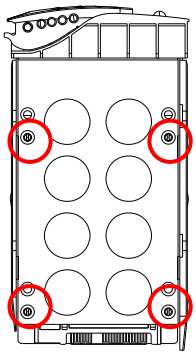
2.4.2 Installing or Replacing 2.5” Hot-swap SAS/SATA HDD or SSD

1. Release a drive tray by pressing the unlock button and pinching the lock lever slightly and pulling out the drive tray.
2. Firmly hold the tray lever and pull the drive out of the bay.



3. Place the 2.5” HDD on the tray and then secure it with four screws on the bottom.



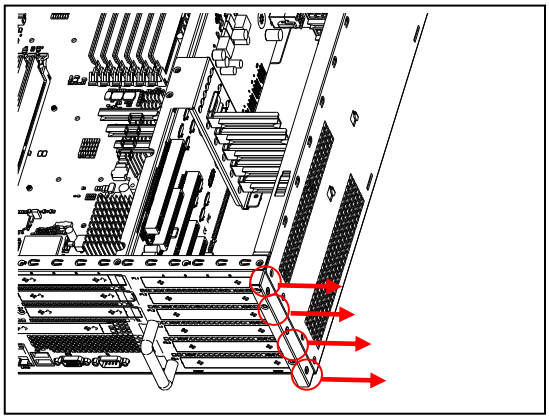


4. Insert the drive carrier into its bay. Push the tray lever until it clicks. Make sure the drive tray is correctly secured in place when its front edge aligns with the bay edge.

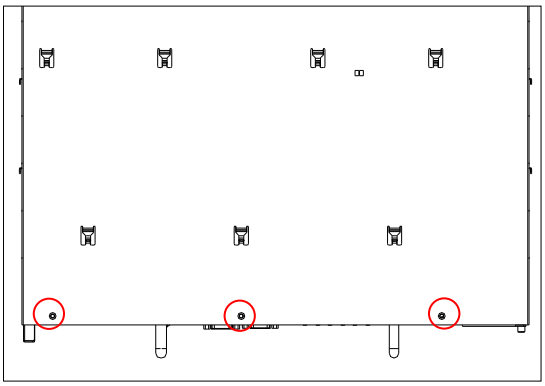
2.5 MB Tray

2.5.1 Removing the MB Tray

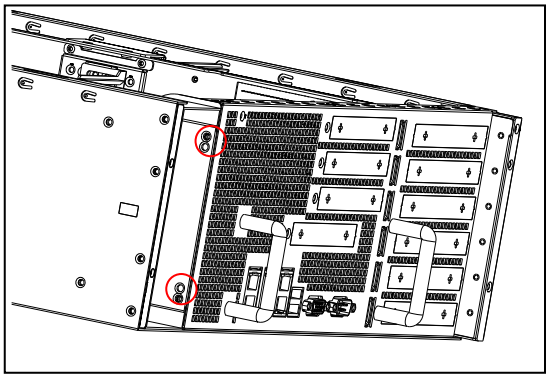
1. Remove the screws on the right side of rear panel.



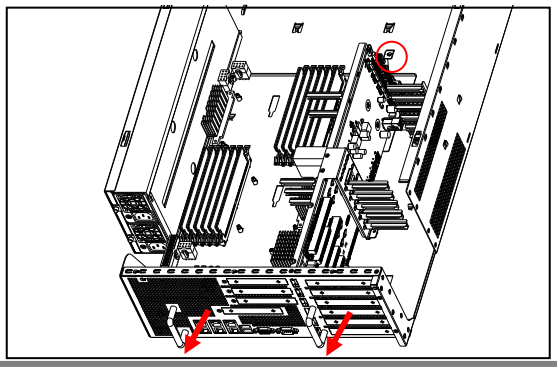
2. Remove the screws on the bottom of barebone.



3. Remove the power housing screws on the left side of rear panel.



4. Release the screw on the fan bracket, then firmly hold the tray lever and pull the MB tray out of the barebone.



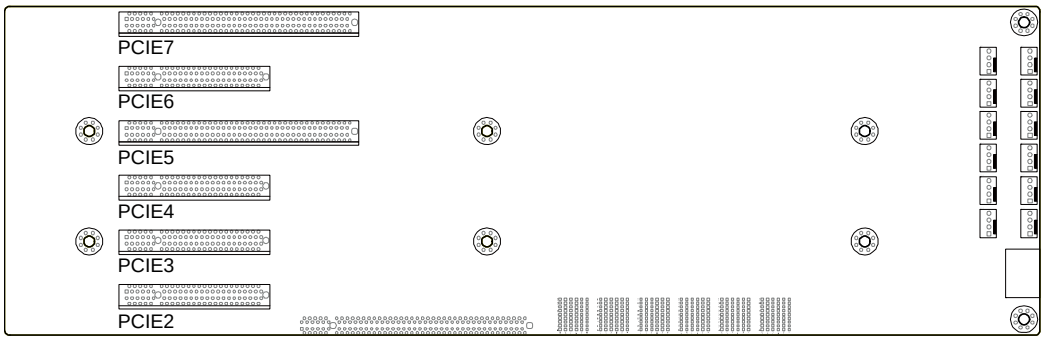
2.6 Riser Card

1.

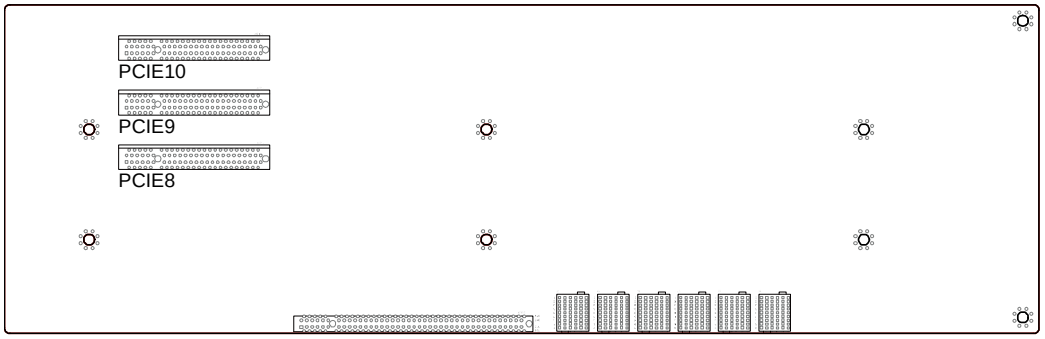
RISER CARD PN (PSG CODE)	DESCRIPTION
PSG-RC-GEVR-90-210(PE3U02)	Gemini 3U Gold finger PCIe Gen2 X16 to 2 PCIe X16 + 3 PCIe X8 + 2 PCIe X8 (X4 lanes) or 2 PCIe X16 (X8 lanes) + 5 PCIe X8 + 2 PCIe X8 (X4 lanes) Vertical Riser

RISER CARD DIAGRAM

Front view:



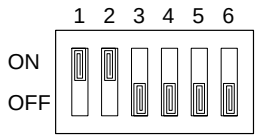
Rear View



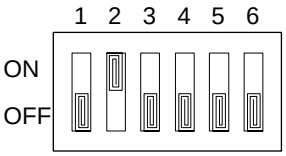
Slot Bandwidth

PCIE 7	X8 or X16
PCIE 6	X8 or disabled
PCIE 5	X8 or X16
PCIE 4	X8 or disabled
PCIE 3	X8
PCIE 2	X8
PCIE 10	X4
PCIE 9	X4
PCIE 8	X8

Default Switch
On Mother Board

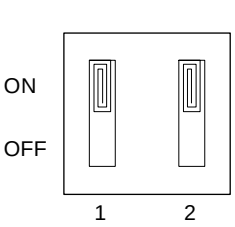


SW1_



SW2 _

On Riser Card



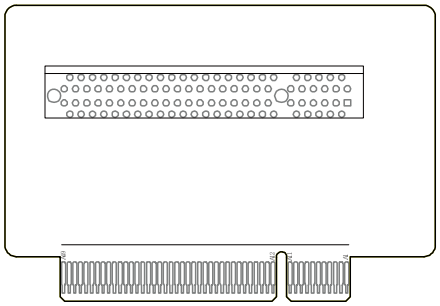
(Default)

SW1-1	SW1-2	PCIE 5	PCIE 4	PCIE 7	PCIE 6
ON	ON	X8	X8	X8	X8
ON	OFF	X8	X8	X16	
OFF	OFF	X16		X16	
OFF	ON	X16		X8	X8

2.

RISER CARD PN (PSG CODE)	DESCRIPTION
PSG-RC-GEOB-10-110 (PE2U04)	Gemini 2U on-board PCIe Gen2 X8 to 1 PCIe X8 Riser

RISER CARD DIAGRAM

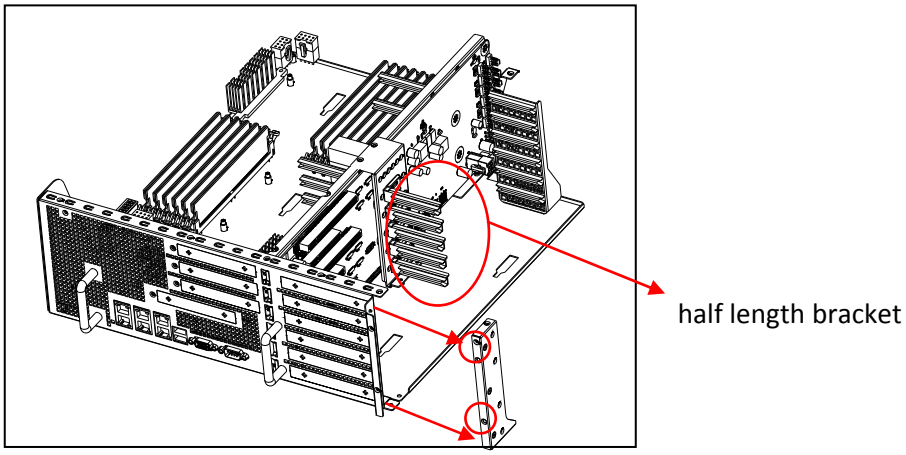


Slot Bandwidth X8

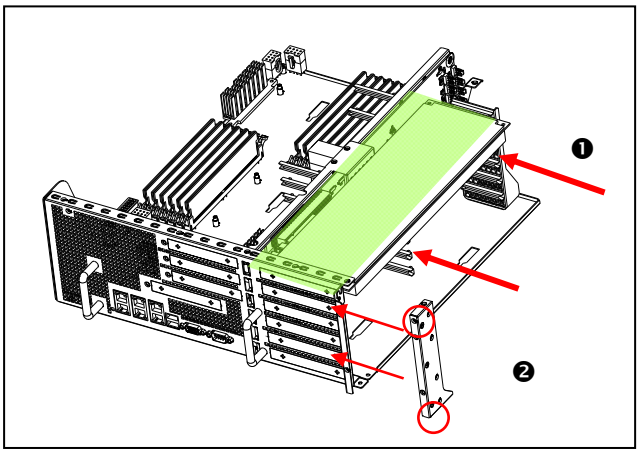
2.7 Expansion Slot

2.7.1 Installing an External Expansion Card to the Riser Card

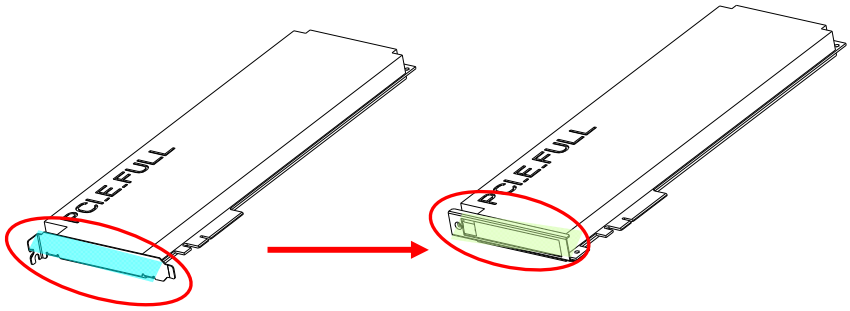
1. Remove two screws to release the bracket. To install a full length expansion card, please remove the half length bracket.

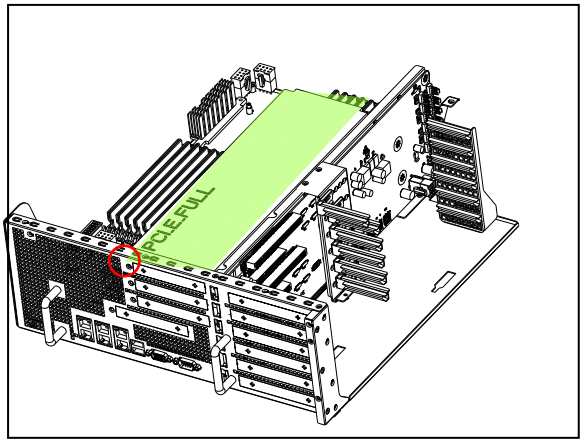


2. Install the expansion card on the proper slot and connect the expansion card to the riser card. Secure the bracket back to fix the expansion card.

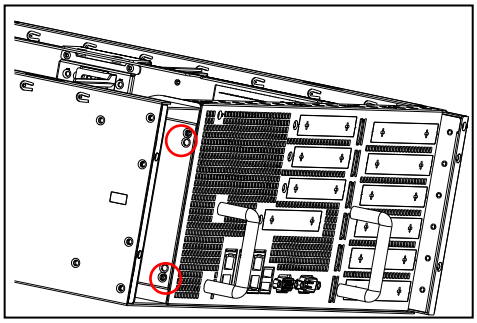


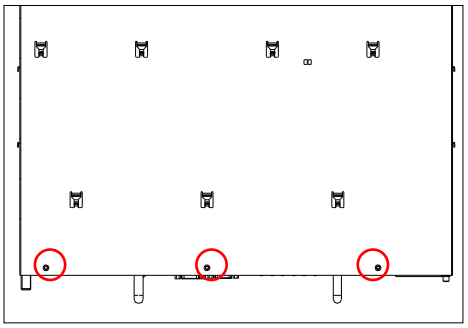
3. When install the full-height expansion card on reversed slot, change the original bracket to the customized bracket from accessory box. Install the expansion card on the proper slot and connect the expansion card to the riser card and then ensure it with the screw on the rear panel.

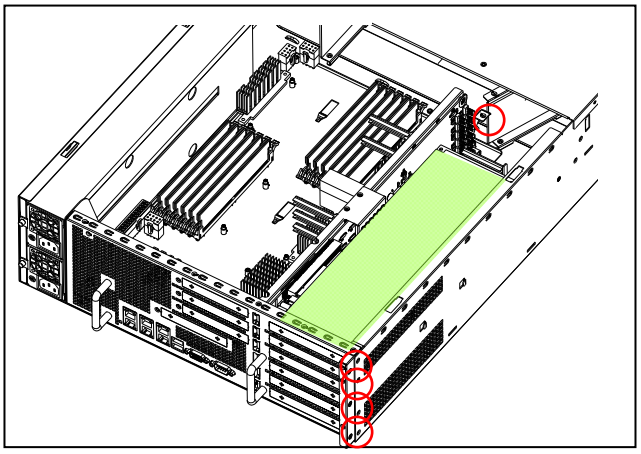




4. Push the MB tray into the barebone and secure the bracket back with the screws to fix the expansion card and MB tray.



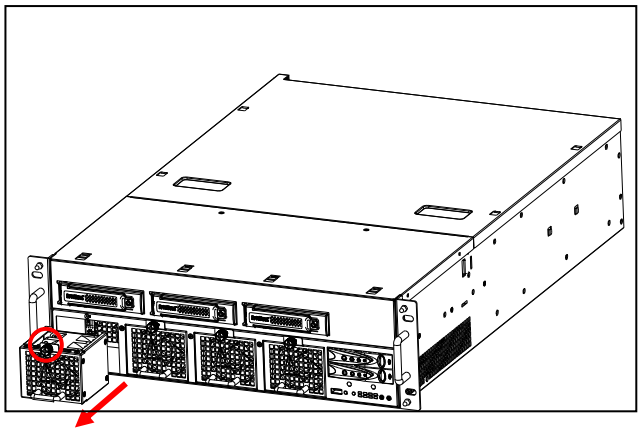




2.8 System Fans

2.8.1 Removing or Replacing the System Fans

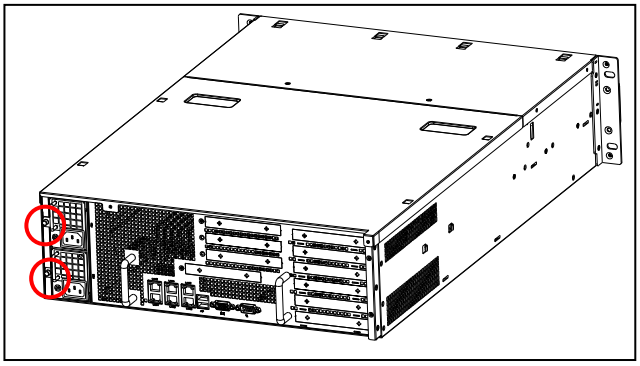
1. Release the thumb screw on the fan module. Hold the fan lever firmly and pull the fan out of the server chassis to remove the fan module from the server chassis.



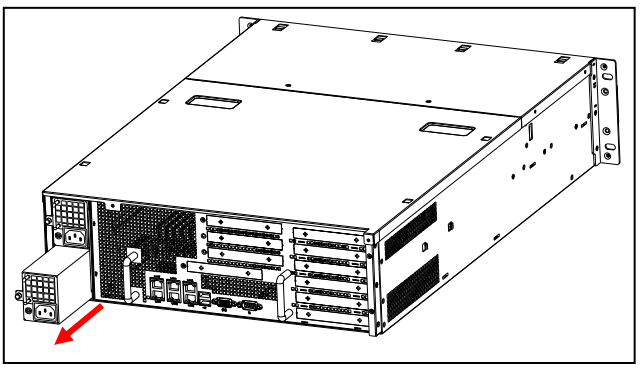
2.9 Power Supply

2.9.1 Removing or Replacing the Power Supply Module

1. Release the two thumb screws on the PSU module.



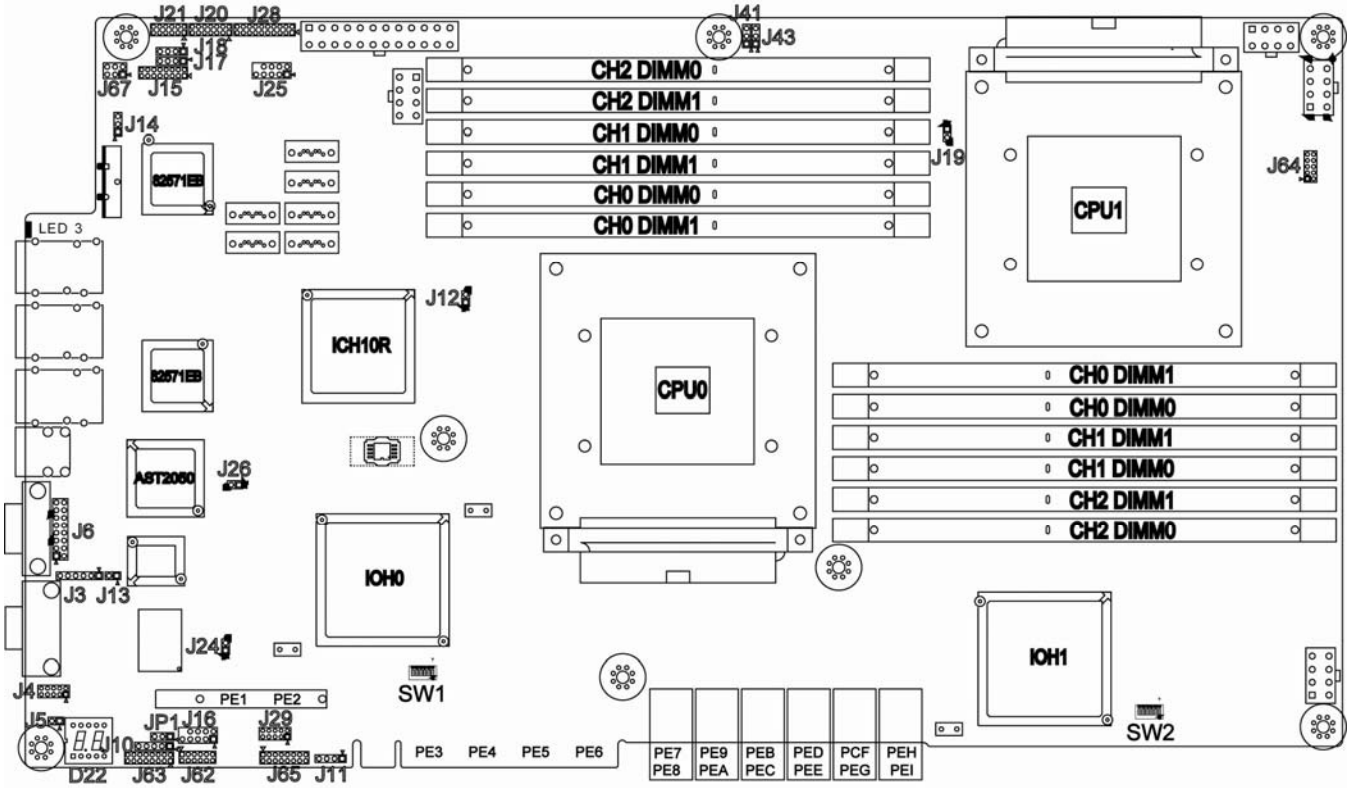
2. Hold the PSU lever and firmly pull the PSU out of the server chassis to remove the PSU.



Chapter 3.
Motherboard Settings

This section describes the jumpers, internal connectors, and internal LEDs setting on Gemini PGS-M-GEDP036D-110 motherboard. We will show the motherboard layout and important jumper settings of the system.

3.1 Motherboard Layout

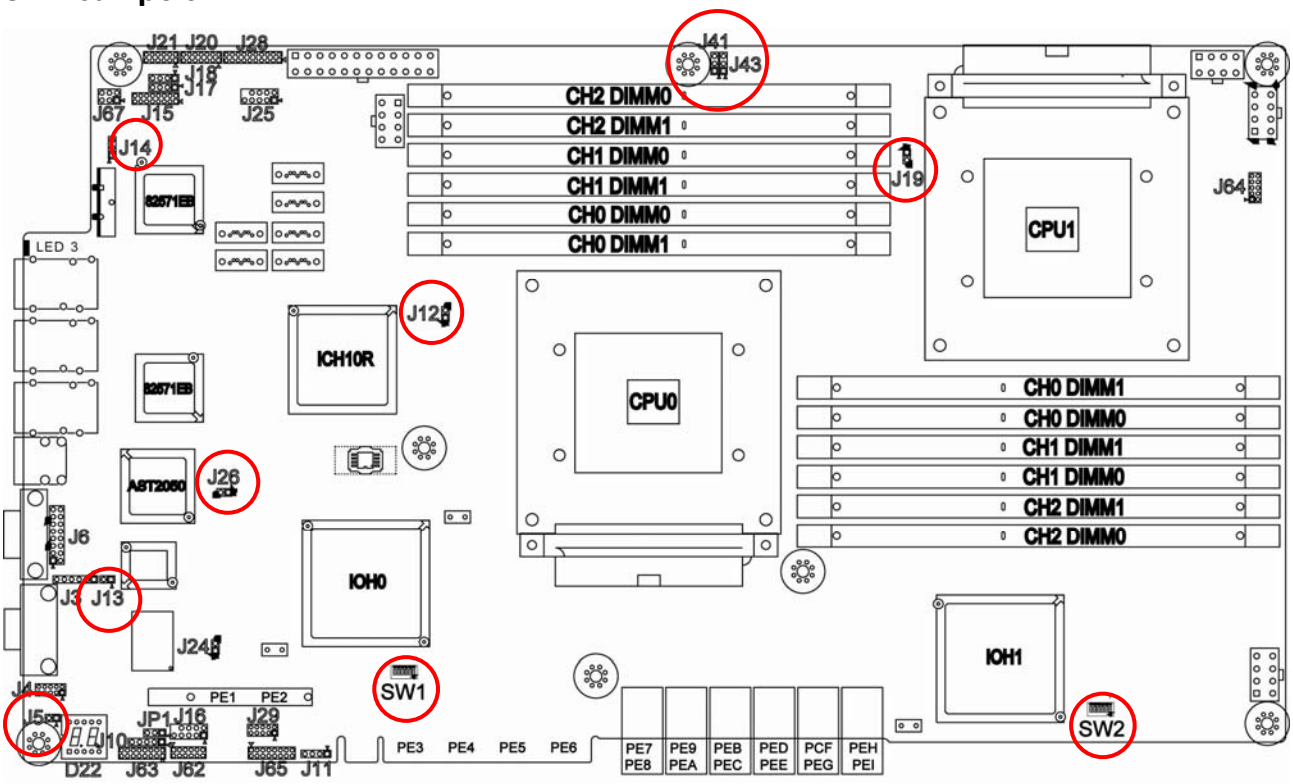


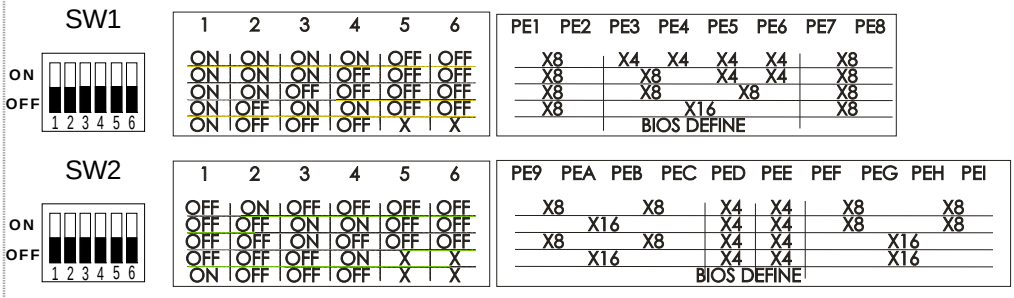
3.2 Motherboard Content List

Jumpers		Location
1	CLEAR CMOS	**J14**
2	CPU0 JTAG BYPASS	**J43**
3	CPU1 JTAG BYPASS	**J41**
4	CPU0 VRM TEST	**J12**
5	CPU1 VRM TEST	**J19**
6	VGA DISABLE	**J26**
7	AST ARM	**J13**
8	AST ARM RESET	**J5**
9	PCIe Strapping configuration	**SW1**
10	PCIe Strapping configuration	**SW2**
11	HOT PLUG CONTROLS	**J11**
Internal Connectors		**Location**
1	USB	**J16**
2	LCM Conn	**J10**
3	BMC DEBUG	**JP1**
4	SIO FAN CONN UP	**J21**
5	SIO FAN CONN DOWN	**J62**

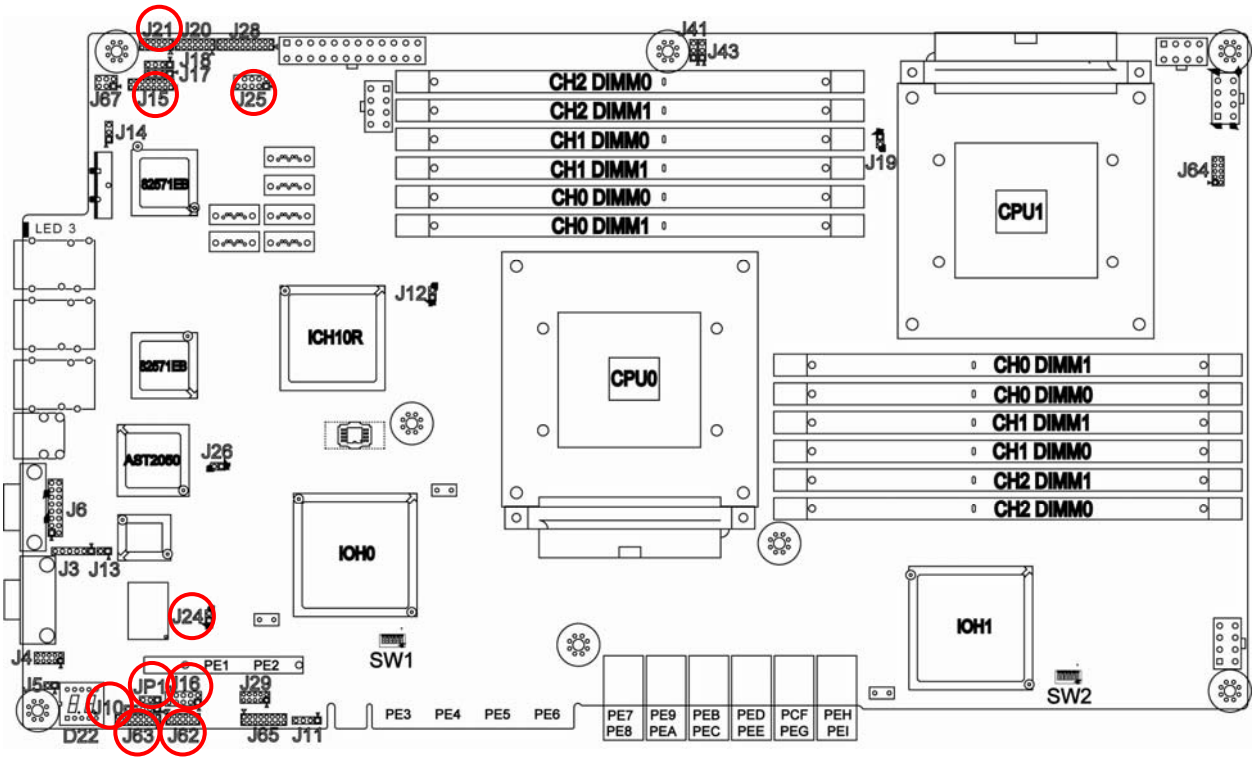
Internal Connectors		Location
6	FAN BOARD CONNECTOR	**J15**
7	FAN BOARD CONNECTOR	**J63**
8	VGA HEADER	**J6**
9	KB/MS	**J3**
10	UART/COM2	**J4**
11	USB	**J25**
12	GPIO	**J29**
13	BUZZER (5V)	**J24**
14	PSU I2C	**J18**
15	IPMB I2C	**J17**
16	VRM TEST POINT	**J64**
17	VOLTAGE TEST PIONT GROUP A	**J65**
18	BMC GPIO	**J67**
Internal LEDs		**Location**
1	LAN LED	**J20**
2	FRONT PANEL	**J28**
3	DEBUG PORT	**D22**

3.2.1 Jumpers



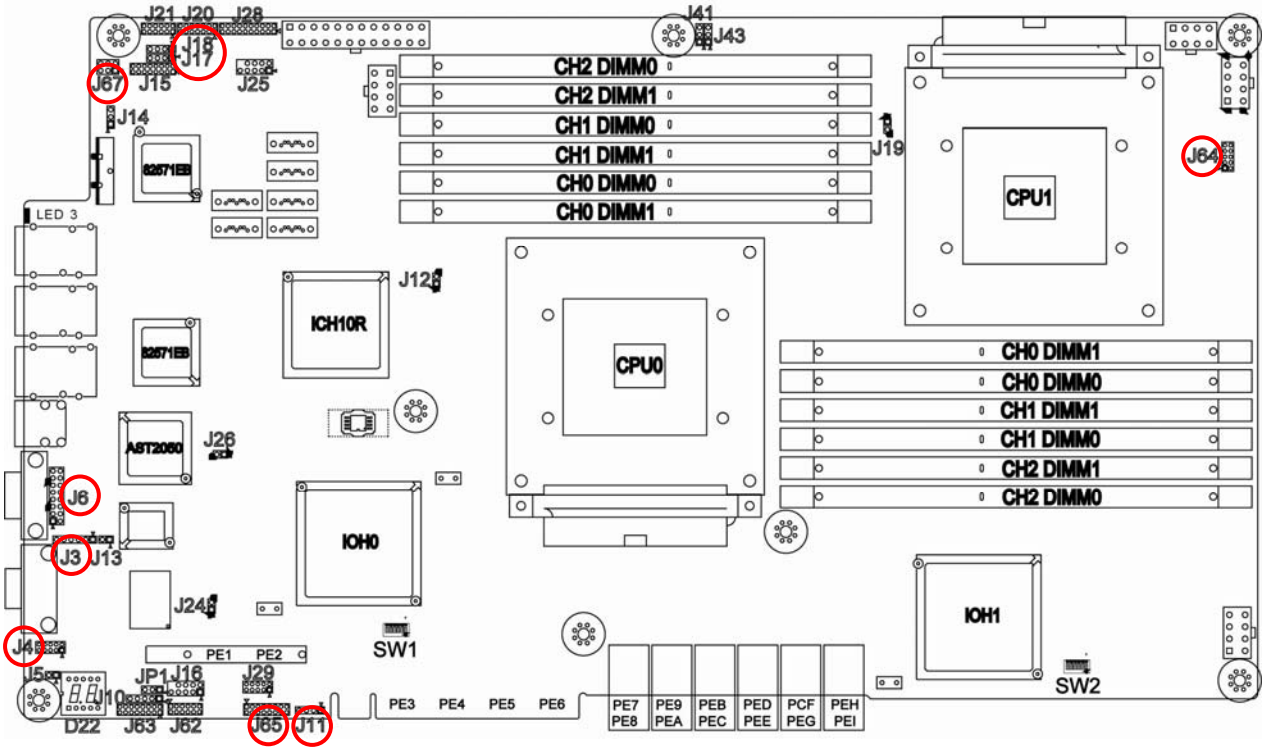
J14	CLEAR CMOS		1-2 NORMAL 2-3 CLEAR OPEN INVALID
J43 / J41	CPU0 / CPU1JTAG BYPASS		1-2 JTAG BY PASS 2-3 NORMAL
J12 / J19	CPU0 / CPU1 VRM TEST		1-2 ENABLE OFF NORMAL
J26	VGA DISABLE		1-2 DISABLE OFF ENABLE
J13	AST ARM		1-2 DISABLE OFF ENABLE
J5	AST ARM RESET		1-2 RESET OFF NORMAL
SW1 / SW2	PCIe Strapping configuration SW1 SW2		

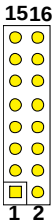
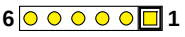
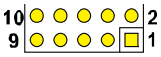
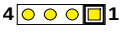
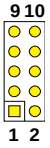
3.2.2 Internal Connectors

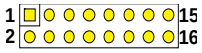
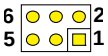


J16 / J25	USB	10 2 9 1	1.USB5V 2.USB5V 3.USBD- 4.USBD- 5.USBD+ 6.USBD+ 7.GND 8.GND 9.GND 10.NC
J15 / J63	FAN BOARD CONNECTOR	16 2 15 1	1.GND 2.3.3V 3.I2CSCL 4.I2CSDA 5.PWM1 6.FAN1_TACH 7.PWM2 8.FAN2_TACH 9.PWM3 10.FAN3_TACH 11.PWM4 12.FAN4_TACH 13.FAN6_TACH 14.FAN5_TACH 15.GND 16.GND
J21	SIO FAN CONN UP	12 2 11 1	1.FAN7_TACH 2.FAN8_TACH 3.FAN1_TACH 4.PWM1 5.FAN2_TACH 6.PWM2 7.FAN3_TACH 8.PWM3 11.GNDc 12.GND
J62	SIO FAN CONN DOWN	1 11 2 12	1.FAN7_TACH 2.FAN8_TACH 3.FAN1_TACH 4.PWM1 5.FAN2_TACH 6.PWM2 7.FAN3_TACH 8.PWM3 9.FAN4_TACH 10.PWM4 11.GND 12.GND
J10	LCM Conn	5 1	1.POWER_BTN 2.RESET_BTN 3.TX 4.RX 5.GND
JP1	BMC DEBUG	3 1	1.Tx 2.Rx 3.GND
J24	BUZZER (5V)	2 1	1.BUZZER+ 2.BUZZER-

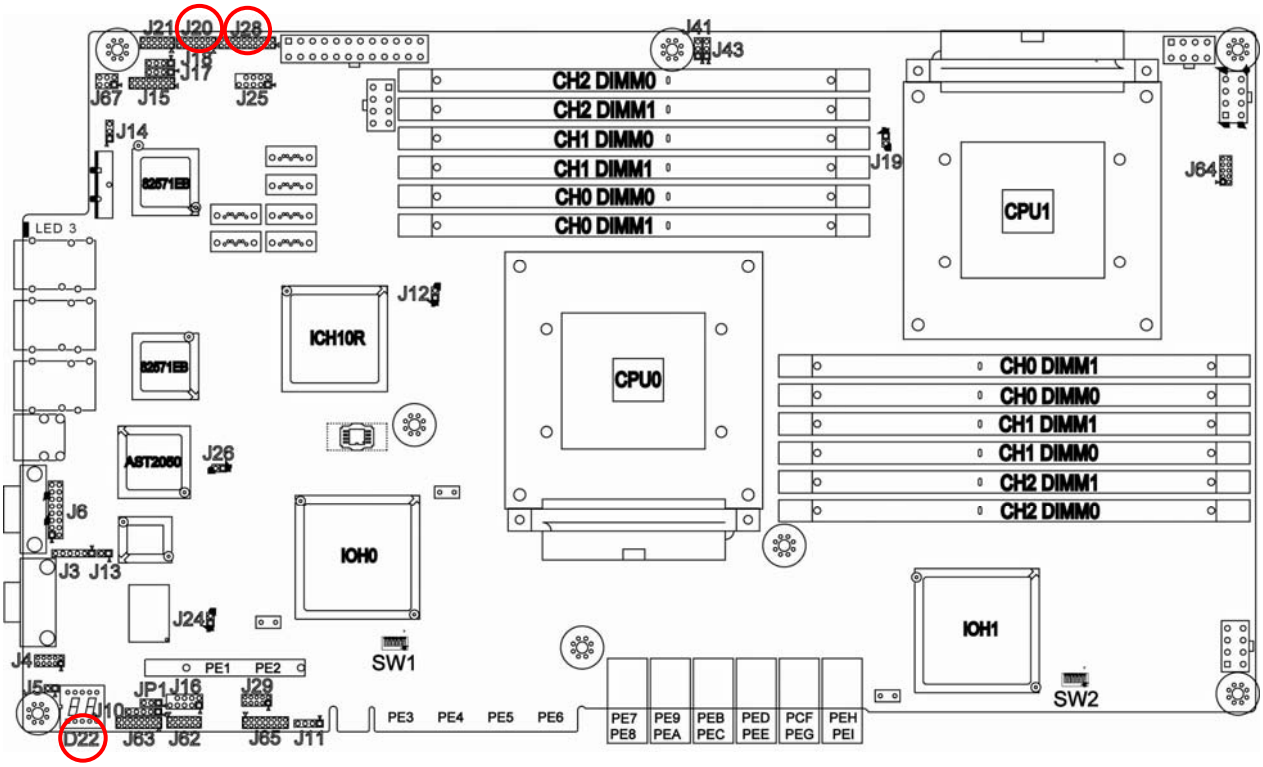
3.2.3 Internal Connectors (continue)

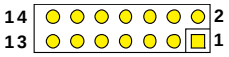
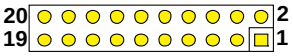


J6	VGA HEADER		1. GND 2. RED 3. GREEN 4. NC 5. DATA 6. GND 7. GND 8. BLUE 9. NC 10.H_SYNC 11.V_SYNC 12.DVD_5V 13.GND 14.GND 15.GND 16.CLK
J3	KB/MS		1.KB_DATA 2.+5V 3.KB_CLK 4.MS_CLK 5.MS_DATA 6.GND
J4	UART/COM2		1.DSR# 2.DCD#G 3.RTS# 4.RXD 5.CTS# 6.TXD 7.RI# 8.DTR# 9.NC 10.GND
J18	PSU12C		1.5V_AUX 2.I2C_CLK 3.I2C_DATA 4.GND
J17	IPMB 12C		1.I2C_DATA 2.GND 3.I2C_CLK 4.NC
J11	HOT PLUG CONTROLS		1. HP_IOH_CLK 2. HP_IOH_DATA 3. ICH SMB ALERT# 4. 3.3V_DUAL
J64	VRM TEST POINT		1.+1.1V_IOH1 2.GND 3.+1.5V_DDR3_CPU1 4.GND 5.VTT_CPU1 6.GND 7.VCCP_CPU1 8.GND 9.NC 10.GND

J65	VOLTAGE TEST POINT GROUP A		1.+1.5V_DDR3_CPU0 2.GND 3.VCCP_CPU0 4.GND 5.VTT_CPU0 6.GND 7.+3.3V 8.GND 9.+3.3V_DUAL 10.GND 11.+5V 12.GND 13.+1.5V 14.GND 14.GND 16.GND
J67	BMC GPIO		1.GND 2.NC 3.GPIOE7 4.GPIOB7 5.GPIOE6 6.GPIOB2

3.2.4 Internal LEDs



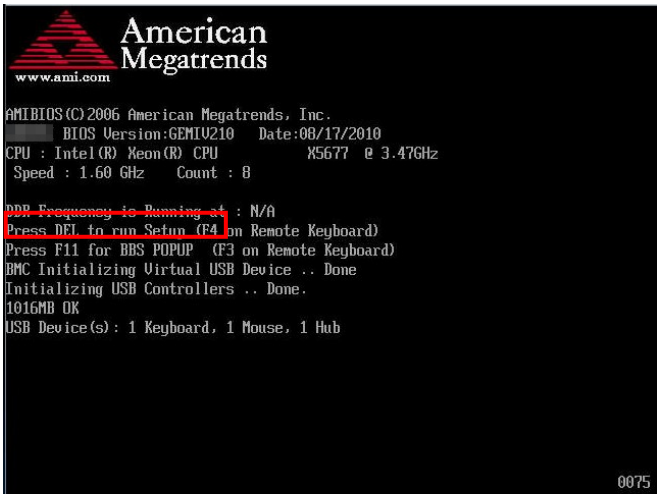
J20	LAN LED		LED ON=LAN LINK LED BLINK=ACTIVE 1.GbE5 LED# 2.GbE5 LED+ 3.GbE4 LED# 4.GbE4 LED+ 5.GbE3 LED# 6.GbE3 LED+ 7.GbE2 LED# 8.GbE2 LED+ 9.NC 10.3.3V 11.GbE1 LED# 12.GbE1 LED+ 13.GbE0 LED# 14.GbE0 LED+
J28	FRONT PANEL		1.PWR LED+ 2.PWR BTN 3.PWR LED# 4.GND 5.HDD LED+ 6.RST BTN 7.HDD LED# 8.GND 9.SYS ID LED+ 10.FP ID BTN 11.SYS ID LED# 12.GND 13.SYS FLT LED+ 14.FP NMI BTN 15.SYS FLT LED# 16.GND 17.SB SMB DATA 18.5VSB 19.SB SMB CLK 20.GND
D22	DEBUG PORT		DEBUG PORT is used by the BIOS to indicate a serious or fatal error to the end user. DEBUG PORT is used when an error occurs before the system video has been initialized.

Chapter 4.
BIOS Configuration and Settings

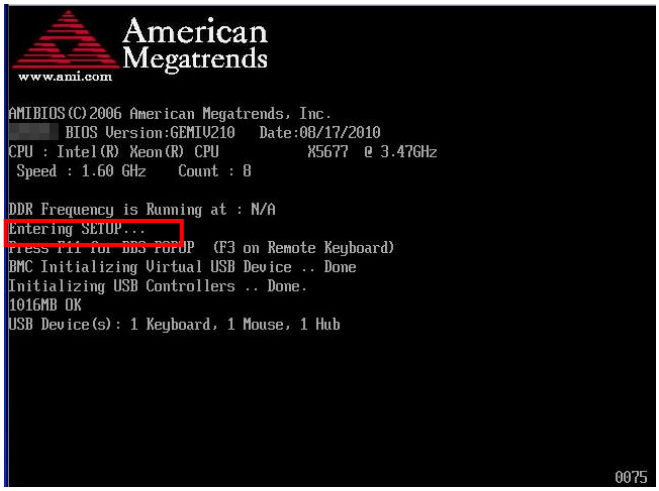
CAUTION: WHEN QUIET BOOT IS ENABLED, OEM LOGO WILL BE DISPLAYED INSTEAD OF POST MESSAGES.

4.1 BIOS Setting

1. Press **DEL** to run the setup procedure.

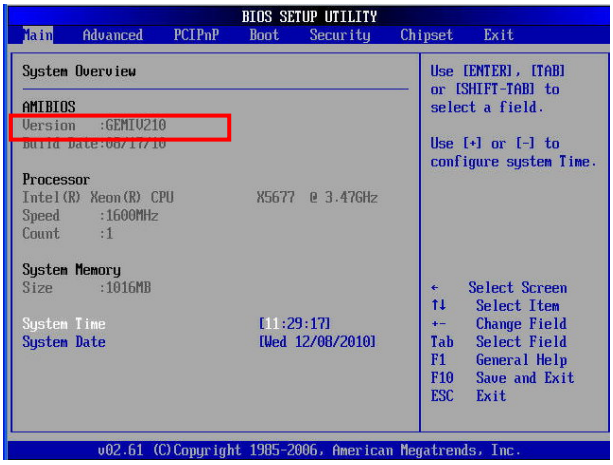


2. There will be a message “Entering SETUP” displayed on the diagnostics screen.

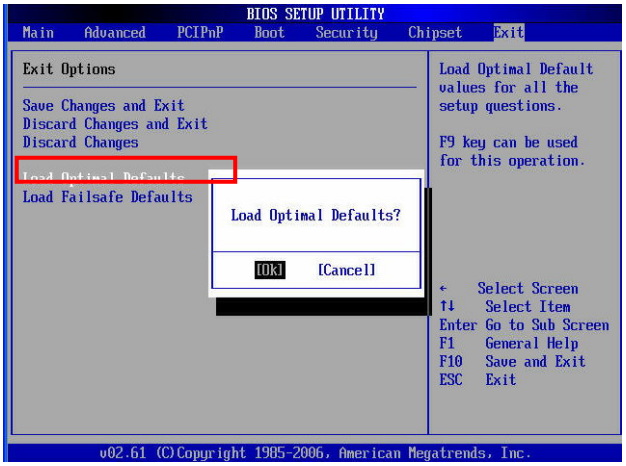


CAUTION: FOR THE OFFICIAL RELEASED VERSION, THE LAST DIGIT OF THE BIOS VERSION MUST END IN AN "0."

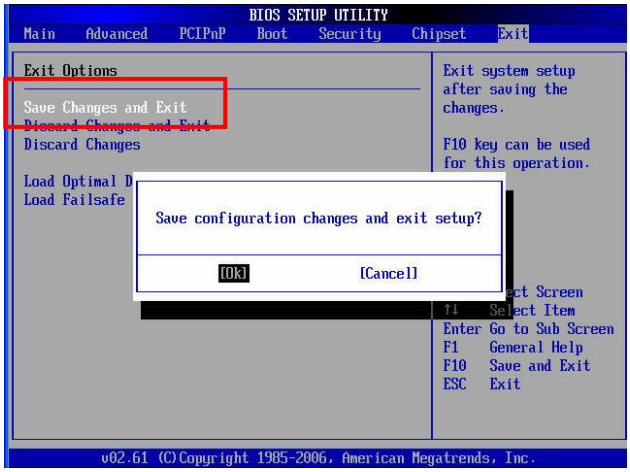
3. Identify the BIOS Version



4. Load Optimal Default setting

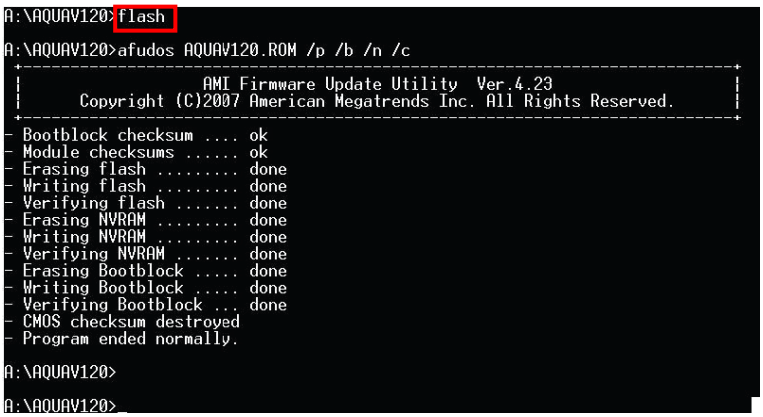


5. Save the setting and exit the BIOS setup utility.



4.2 Updating BIOS

1. AFUDOS is a BIOS update utility with command line interface that works in DOS environment.
2. The latest BIOS version is available from the FAE or AIC website.
3. Enter “flash” at the DOS command line.
4. Reboot the system after the update.

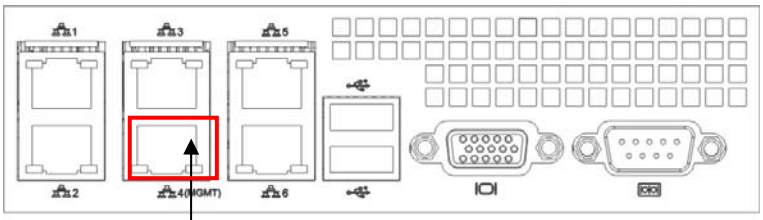


CAUTION: DO NOT SHUT DOWN THE SYSTEM WHILE THE BIOS IS UPDATING.

CAUTION: THE SYSTEM WILL REBOOT AFTER EXITING THE BIOS UPDATE UTILITY.

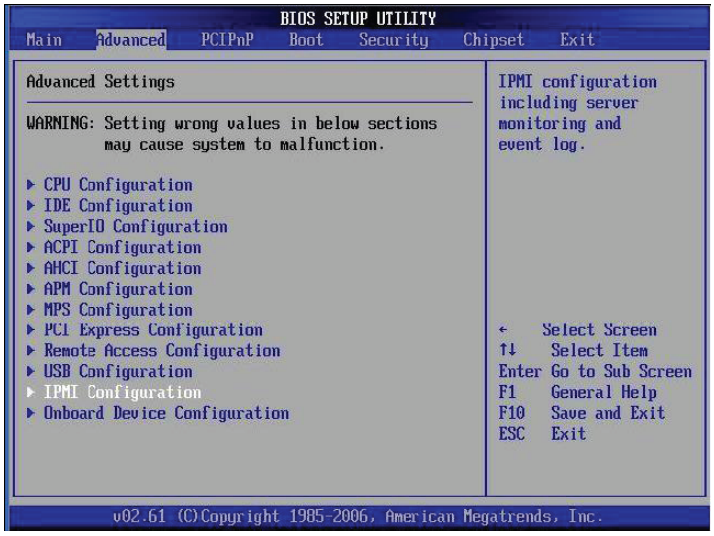
Chapter 5.
BMC Configuration and Settings

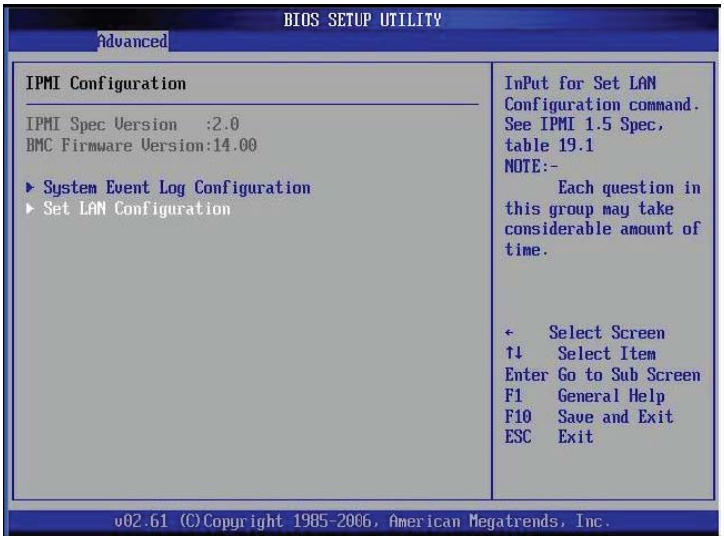
Insert BMC IP LAN into the BMC LAN port. There are two methods to setup BMC IP:



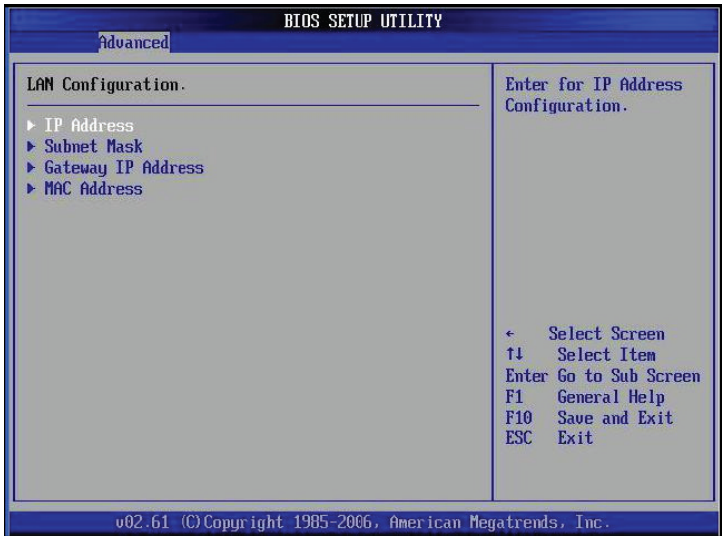
5.1 Method 1 (Use the BIOS setup)

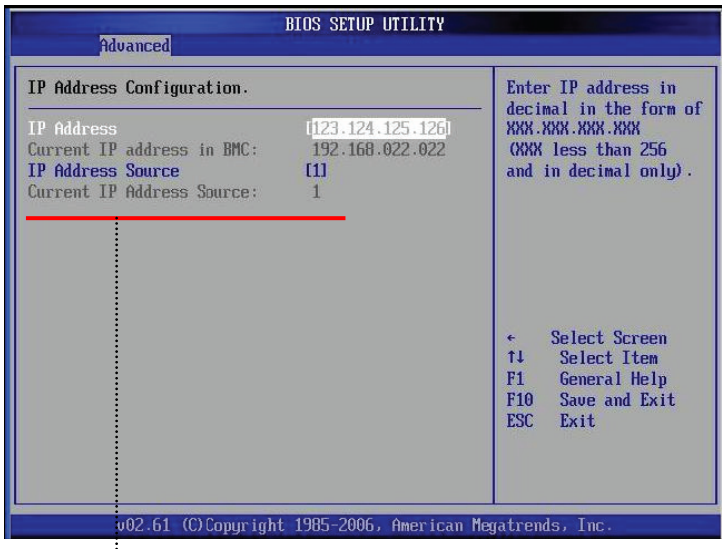
1. BIOS SETUP -> Advance -> IPMI configuration -> Set LAN configuration





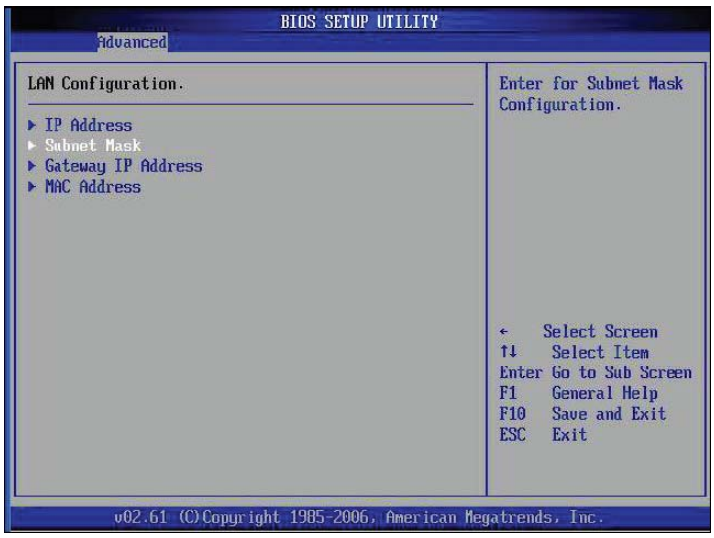
2. Input IP address. Set IP static.

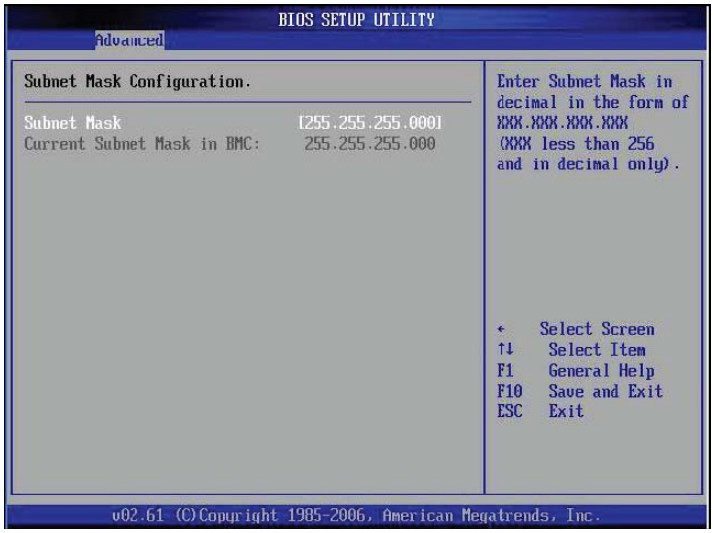




NOTE: TYPE "1" FOR SELECTING STATIC IP MODE OR TYPE "2" FOR SELECTING DHCP MODE.

3. Input subnet mask address.

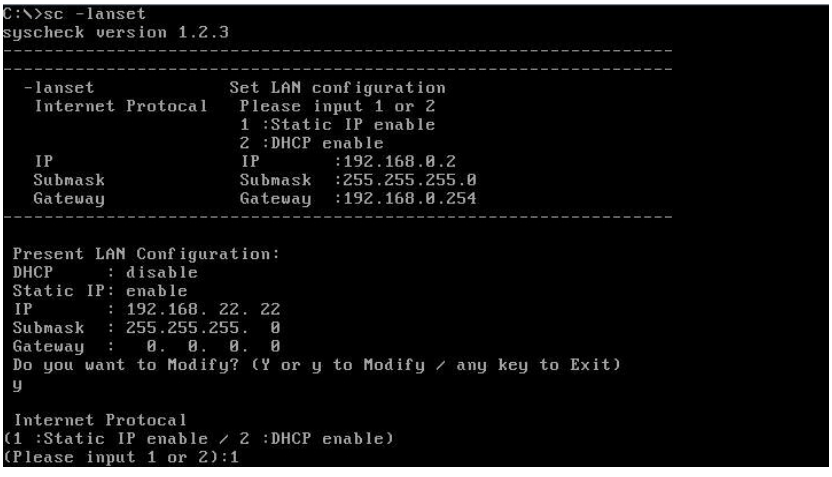




5.2 Method 2 (Use a Dos tool - Syscheck)

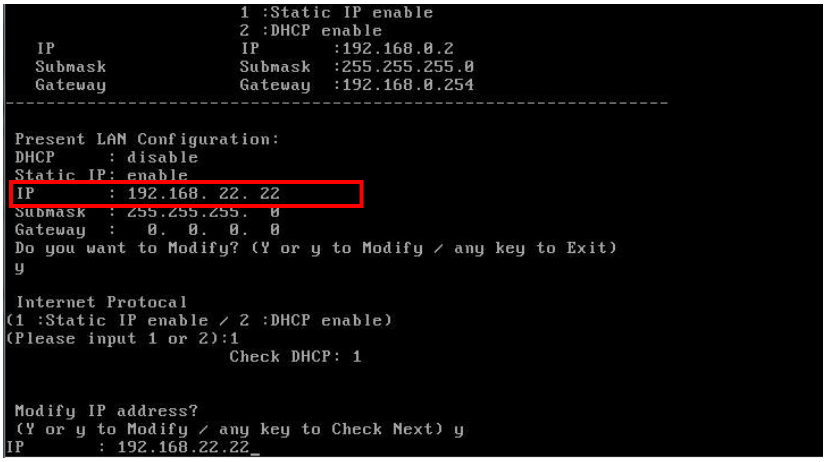
1. Type : **sc –lanset**.

2. Modify IP setting.



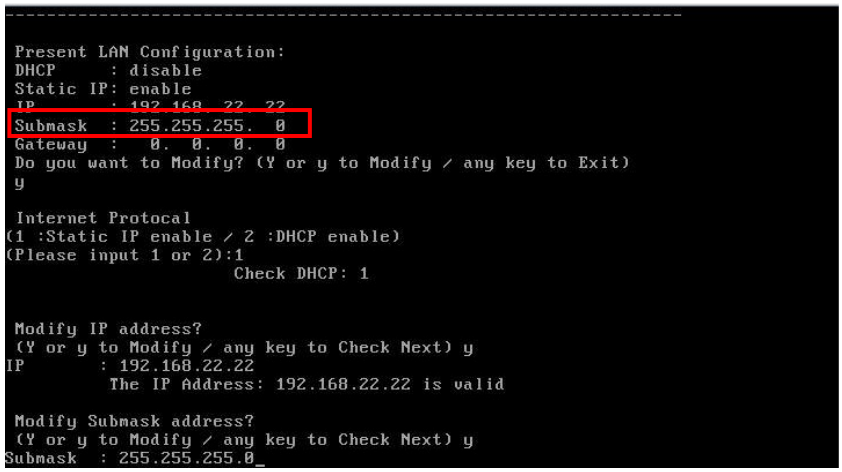
NOTE: TYPE 1 FOR SELECTING STATIC IP MODE OR TYPE 2 FOR SELECTING DHCP MODE.

3. Input IP address.

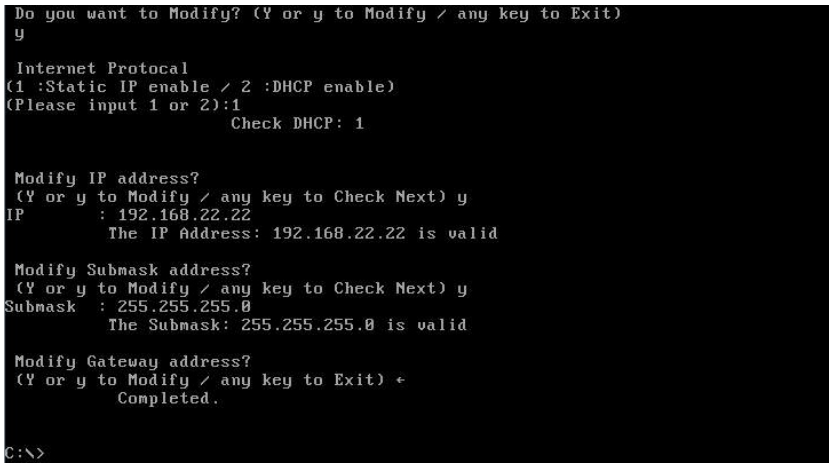


4. Input submask address.

Below IP address is an example using a default IP setting. User is allowed to change the IP address for realistic use.



5. Finish BMC IP configuration.



NOTE: TYPE SC.EXE –LANGET COMMAND TO OBTAIN BMC IP AND MAC ADDRESS.

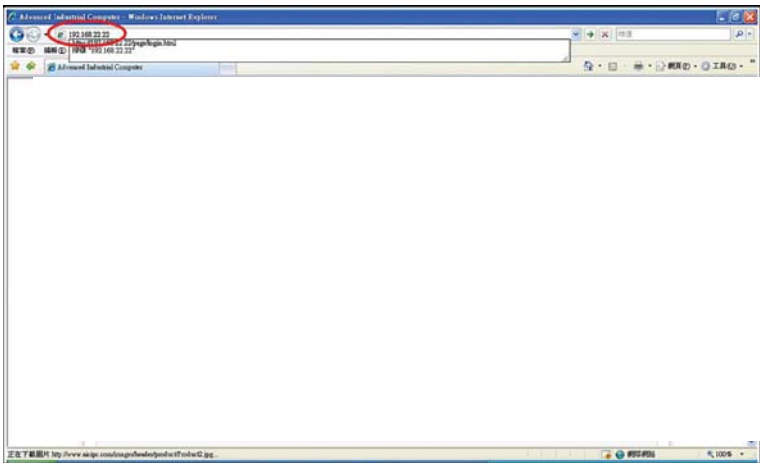
```
C:\>sc -langet
syscheck version 1.2.3
------------------------------------------------------------------
------------------------------------------------------------------

 IP              : 192.168. 22. 22
 Submask         : 255.255.255.  0
 Gateway         :   0.  0.  0.  0
 MAC             : 00-15-B2-A1-29-27
 DHCP            : disable
 Static IP       : enable

C:\>
```

5.3 Connect to BMC

NOTE: THIS FEATURE WORKS WITH JAVA 6 RUNTIME INSTALLED CONSOLE ENVIRONMENT.

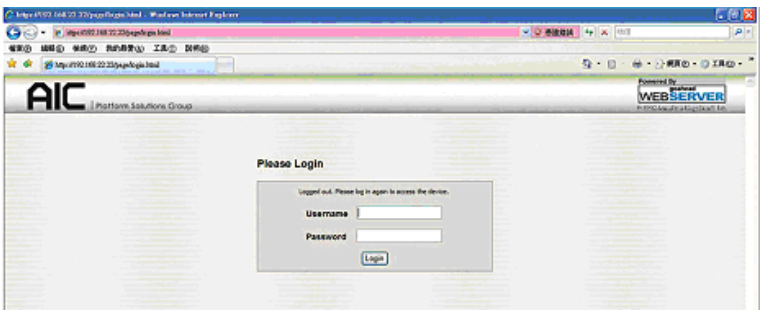
Below IP address is an example using default IP setting. User is allowed to change the IP address for realistic use.

1. Open the browser then type default BMC IP address: **192.168.22.22**



2. Use the default user name and password for first-time login to ASTER.

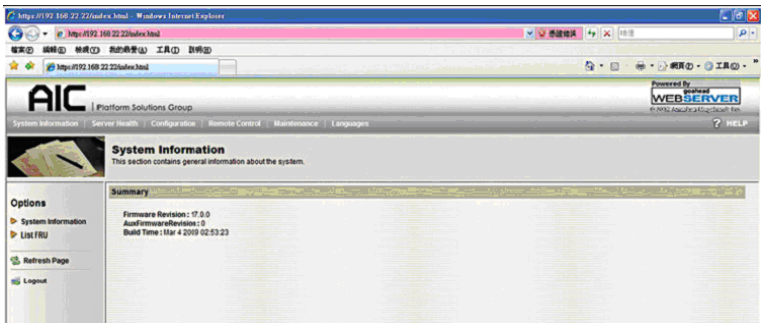
Field:	Default
UserName:	root
Password:	superuser



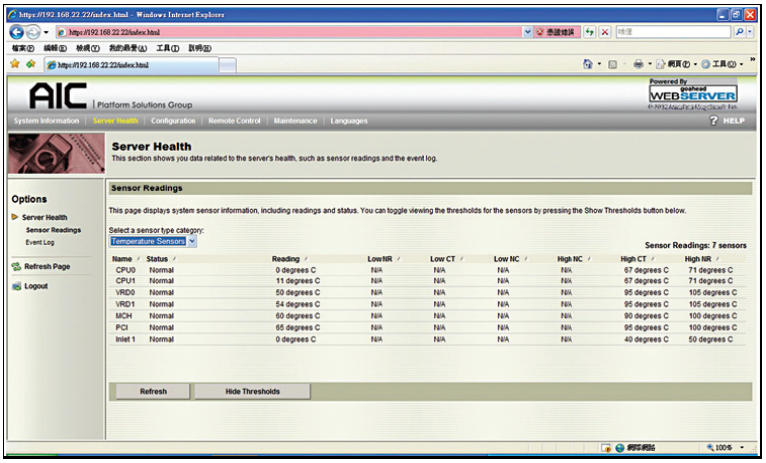
NOTE: THE DEFAULT USER NAME AND PASSWORD ARE IN LOWER-CASE CHARACTERS.

NOTE: USERS WHO LOGIN WITH THE ROOT USER NAME AND PASSWORD WILL HAVE FULL ADMINISTRATIVE POWER. THE ROOT PASSWORD CAN BE CHANGED AFTER LOGIN.

3. Information of ASTER firmware.

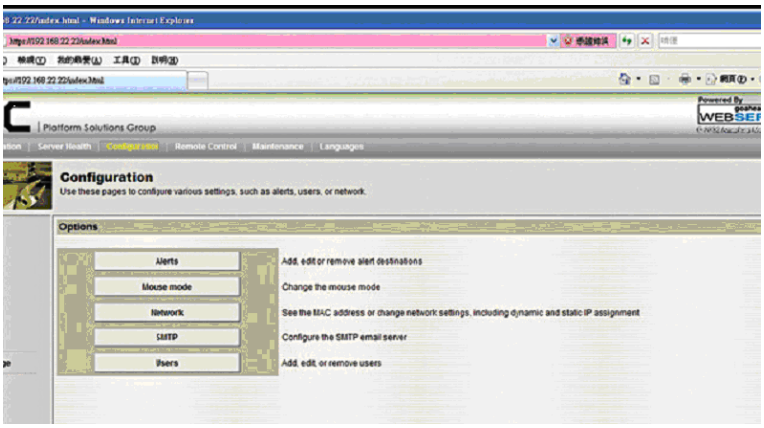


4. Server Health - Sensor Readings:

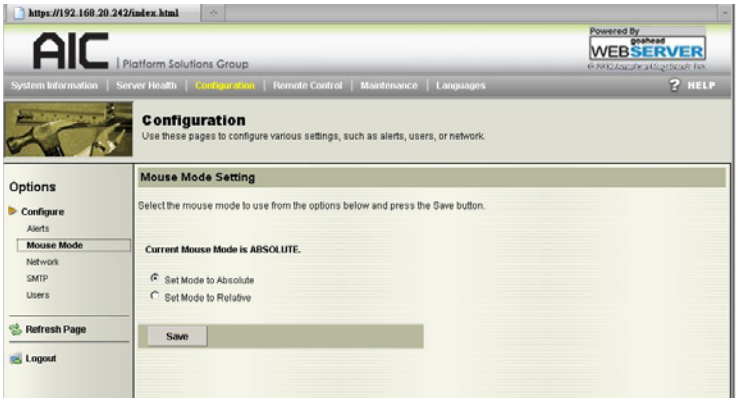


5. Configuration

Please refer to AIC BMC User Guide for more information on AIC BMC.

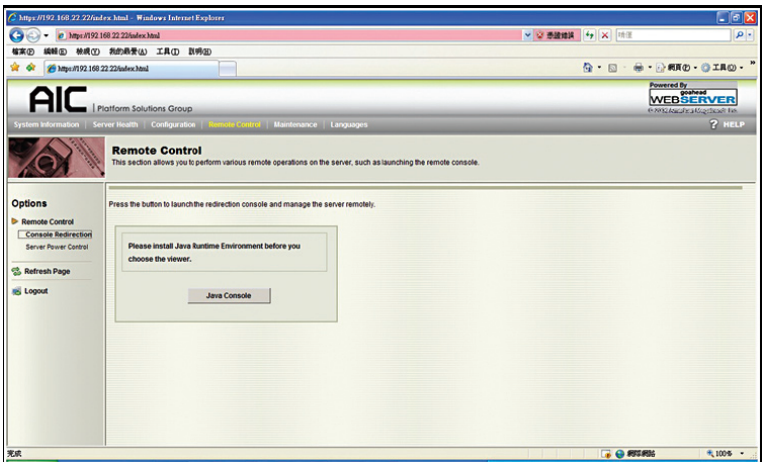


Mouse Mode setting:

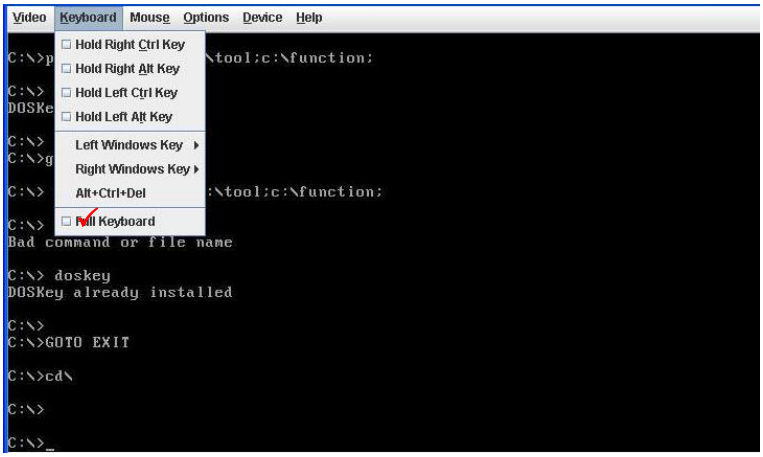


- For Windows OS environment, set mode to absolute.
- For Linux OS environment, set mode to relative.

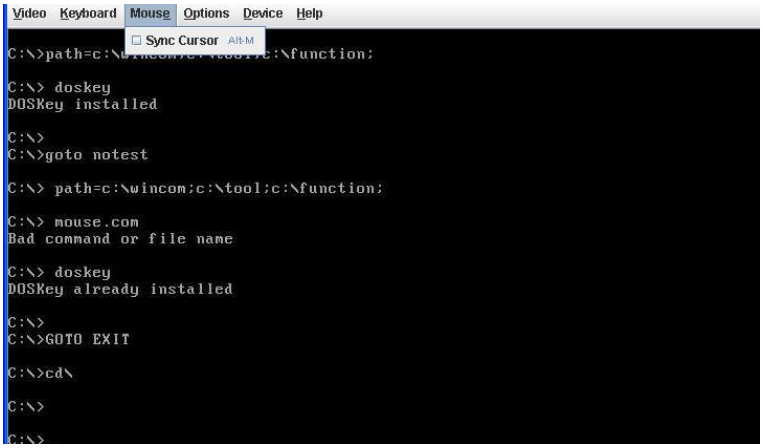
6. Remote Control:



Environmental setting:



Press “ALT+M” for local and remote OS mouse control switching.



NOTE: CLOSE ALL OTHER APPLICATIONS. THIS STEP IS REQUIRED FOR "ALT+M" TO BE EXECUTED PROPERLY.

5.4 Updating BMC Firmware

1. Boot to the DOS (MS-DOS or Free DOS is workable)
2. Enter BMC firmware directory [**XXXXNYYY**]; **XXXX**: M/B name ; **YYY**: firmware version
3. Execute **a.bat** batch file to update the BMC firmware

   Example:

   A:>cd **AQUAN120**

   A:\ **AQUAN120**>a.bat

   This is just an example. The latest BMC firmware version is available from the FAE or AIC website.
4. After update BMC firmware, please power off and then power on system.

NOTES:

1. DO NOT USE EMM386 IN DOS ENVIRONMENT WHEN UPDATING FIRMWARE OR YOU WILL GET A FAIL.

2. IN SOME CRITICAL CONDITION, AFTER UPDATING BMC FIRMWARE OR CONFIG FILE, YOU MIGHT NEED TO UNPLUG AC POWER CORD 5 SECONDS AND THEN PLUG AC POWER CORD TO RESET BMC, THEN UPDATED NEW FUNCTION CAN WORK PROPERLY.

5.5 Updating BMC Configuration

CAUTION: SYSTEM MIGHT ENCOUNTER SERIOUS ISSUES WHEN THE WRONG BMC FIRMWARE AND WRONG BMC CONFIGURATION IS UPDATED. EACH BMC CONFIGURATION HAS A CORRESPONDING BMC FIRMWARE THAT HAS BEEN TESTED AND APPROVED FOR EACH SPECIFIC PRODUCT. PLEASE MAKE SURE FIRMWARE AND CONFIGURATION VERSIONS ARE CORRECT BEFORE UPDATING. CONSULT THE AIC WEB SITE (HTTP://WWW.AICIPC.COM) FOR THE CORRECT COMBINATION OF FIRMWARE AND CONFIGURATION VERSIONS FOR YOUR SYSTEM. PLEASE ALSO ENSURE THAT THE BMC FIRMWARE IS UPDATED BEFORE THE BMC CONFIGURATION.

1. Boot to DOS (MS-DOS or Free DOS is workable)
2. Enter BMC config file directory [**XXXXXZYY**];

   XXXXX: barbone name; **YY**: config version
3. Execute the **config.bat** batch file to update config file

   Example:

   A :> cd **G107NC01**

   A:\ **G107NC01**>config.bat

   This is just an example; the latest BMC configuration version is available from the FAE or AIC website.
4. After update config file, please power off and then power on system.

NOTE: 1.DO NOT USE EMM386 IN DOS ENVIRONMENT WHEN UPDATING FIRMWARE OR YOU WILL GET A FAIL.

2.IN SOME CRITICAL CONDITION, AFTER UPDATING BMC FIRMWARE OR CONFIG FILE, YOU MIGHT NEED TO UNPLUG AC POWER CORD 5 SECONDS AND THEN PLUG AC POWER CORD TO RESET BMC, THEN UPDATED NEW FUNCTION CAN WORK PROPERLY.

Chapter 6.
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Note